OPERATOR MANUAL

BASIL® 9502

Cage and Rack Washer

(2004-06-29) P920017-148

A WORD FROM STERIS CORPORATION

This manual contains important information on the proper use of this equipment. Refer to Section 6, *Routine Maintenance*, for instructions in routine care of this washer. All personnel and department heads are urged to carefully review and become familiar with the *Safety Precautions* and instructions contained herein. These instructions should be retained in a conveniently accessible area for quick reference. This equipment is specifically designed only for the uses outlined in this manual.

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating this washer can be found in Section 1. Do not operate the equipment until you have become familiar with this information.

Advisory

STERIS does not intend, recommend, or represent in any way that this Basil® 9502 Cage and Rack Washer be used for the sterilization of any animal care or other device which has been contaminated with pathogenic microorganisms.

Any alteration of the washer not authorized or performed by STERIS which could affect its operation will void the warranty, could adversely affect washing efficacy, could violate national, state, and local regulations, and could jeopardize your insurance coverage.

To help assure operators are adequately trained in the safe use of the equipment, STERIS recommends:

- all personnel who operate or maintain the equipment are trained in its operation and in its safe use;
- personnel working with toxic chemicals and vapors (if applicable) have comprehensive instructions in the washer disinfector process, relevant health hazards, and methods to detect the escape of toxic materials;
- there is regular training of all personnel concerned with the operation and maintenance of the equipment; attendance records are maintained; and that evidence of understanding is demonstrated.

Indications for Use

The Basil 9502 Cage and Rack Washer is intended for use in the sanitation of soiled, reusable animal care devices such as cages, racks, debris pans, feeder bottles, and other miscellaneous items by providing thorough cleaning, and optional drying.

This washer is specifically designed to only process goods as outlined in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for recommended washing technique.

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Service Information

A thorough preventive maintenance program is essential for safe and proper equipment operation. You are encouraged to contact STERIS concerning extended service maintenance agreements to give your equipment planned maintenance.

A global network of skilled service specialists can provide periodic inspections and adjustments to assure low-cost peak performance. STERIS can provide information regarding the Annual Maintenance Agreements.

STERIS carries a complete line of accessories for use in this equipment. A STERIS representative will gladly review these with you.

See inside back cover for contact information.

Certification

This **Basil 9502 Cage and Rack Washer** complies with the following standards:

- **Underwriters Laboratories (UL):**
  Standard 61010A-1.
- **Canadian Standards Association (CSA):**
  Standard CAN/CSA C22.2 No. 1010.1.

CE

Governing Directive for the Affixing of the CE Mark:

- Machinery Directive (98/37/CE).

Conformity to Other Applicable Directives:

- Low Voltage Directive (73/23/EEC) and amendment (93/68/EC).
- Electromagnetic Compatibility Directive (89/336/EEC) and amendments (91/263/EEC, 92/31/EEC, and 93/68/EEC).

Standards applied to demonstrate conformity to the directives:

- EN/IEC-61010-1; EN/IEC-61010-2-045; EN/IEC-61326-1.

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SAFETY PRECAUTIONS AND SYMBOLS

1

The following *Safety Precautions* **must** be observed when operating and servicing this equipment. WARNING indicates the potential for personal injury and CAUTION indicates the potential for danger to equipment. These *Safety Precautions* are repeated, where applicable, throughout the manual. **It is important to review these *Safety Precautions* before operating or servicing the unit.**

Strictly following these *Safety Precautions* enhances your ability to safely and effectively utilize the unit and allows the customer to avoid improper maintenance methods which could damage the unit or render it unsafe. It is important to understand that these *Safety Precautions* are not exhaustive; customers are encouraged to develop their own safety policies and procedures to enhance and compliment these Safety Precautions.

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- Always wear appropriate Personal Protective Equipment (PPE) when cleaning or removing debris from bottom of the wash chamber and over the suction plate.
- Before servicing or cleaning exterior of unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to de-energize unit. Keep the key on yourself.
- Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS regarding service options.
- Regularly scheduled preventive maintenance, in addition to the faithful performance of the minor maintenance described within this manual, is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.
- To open doors from inside wash chamber, pull EMERGENCY STOP cables. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors, but between the door panels.
- To test or demonstrate Emergency Exit Safety Doors, first press EMERGENCY STOP pushbutton (located under control) or EMERGENCY STOP cables (inside wash chamber) to turn power OFF. If power is still on while adjusting or servicing doors, the photoelectric sensor will detect the movement of the door panels and doors will open automatically.

WARNING – PERSONAL INJURY HAZARD:

- If doors are still slightly open (less than 2 inches [5 cm]) when power is restored after a power failure, control will apply pressure to complete closing. Lock building electrical supply disconnect switch in OFF position and close unit air supply when opening doors after a power failure.
- Keep hands/fingers away from closing doors to prevent crushing between the two doors.
- Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in the bottom of the wash chamber
- When doors are closing, a pinch point is created at the hinges. Keep fingers away from door hinges to prevent pinching.

(See next page for additional Safety Precautions)

WARNING – ELECTRICAL SHOCK AND/OR BURN HAZARD:

Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

WARNING – BURN HAZARD:

After pressing STOP/RESET touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.

Except for emergency, do not open door when cycle is in progress. In an emergency, first stop cycle by pressing the EMERGENCY STOP pushbutton and wait for water flow to stop. Wear appropriate Personal Protective Equipment (PPE) whenever reaching into or entering wash chamber.

Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate Personal Protective Equipment (PPE) and avoid all contact with inner walls when entering chamber to unload washer.

WARNING – SLIPPING HAZARD:

To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD:

Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

Detergents are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow.

- Read and follow the precautions and instructions on the detergent label and in the Material Safety Data Sheet (MSDS) prior to handling detergent containers, or servicing the detergent injection pumps and lines.
- Wear appropriate Personal Protective Equipment (PPE) whenever handling chemicals or servicing chemical injection pumps and lines.

Wear appropriate Personal Protective Equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

Always leave plenty of space between load and doors. Leaning load against doors will damage doors and also prevent them from opening or closing.

Always use a silicone lubricant to lubricate squeeze tubes. Petroleum-based lubricants, such as Vaseline or grease, will cause squeeze tubes to melt.

Avoid product damage. Always select a cycle appropriate for the items being processed.

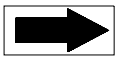
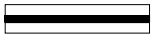
Before operating the unit, always position manifolded Bottle Washing Cart and/or Central Header Manifold over central water inlet connector. If manifolded accessory is not positioned correctly, damage may result and unit will be unable to effectively wash load.

(See next page for additional Safety Precautions)

CAUTION – POSSIBLE EQUIPMENT DAMAGE (Cont'd):

- Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.
- Keep away from doors to prevent load detection sensor from stopping doors from closing.
- Remove all cellulose-type bedding from cages and pans before processing. Cellulose bedding can clog filters and piping.
- Use non-abrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies can be harmful to stainless steel. Do not use these cleaners on painted surfaces.
- When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

1.1 Symbols on Unit

Symbol	Definition
	Transfer of Heat, Hot Surface.
	Protective Earth (Ground).
	Warning! Risk of Electrical Shock.
	Warning. Refer to Manual for Further Instructions.
	Warning! Do Not Step Here.
	Fork Lift: Place Forks of The Fork Lift Here.
	Safety Exit: Push Here in Case of an Emergency.
	Rotation: Direction of the Rotating Device.
	Load Delimitation: Do Not Place Load Over These Marks.
	Factory Adjustment: Do Not Adjust.
	Unlock and Energize Unit.
	Lock and De-Energize Unit.
	Initialize/Reset Unit.

1.2 Symbols on Nameplate

Symbol	Definition
MODEL	Model Number of the Unit.
S/N	Serial Number of the Unit.
kVA	Kilovolt-Ampere.
V__~	Volt, Number of Phase (3 or 1 [blank]), Alternate Current.
A	Ampere.
YEAR	Year of Manufacture of the Unit.
Hz	Hertz – Frequency of the Unit.
WIRE	Number of Wires in the Electrical Cable (Ground Not Included).

INSTALLATION VERIFICATION

2

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

2.1 Technical Specifications

These specifications are intended to describe the technical information given on the nameplate of your washer and to state other relevant information. Check Equipment Drawing or Identification nameplate, located on frame of mobile mechanical core, below main electrical box, for proper voltage and amperage.

2.1.1 Voltage and Amperage

This unit operates on:

- 380/400/415 V~, 3-phase, 50 Hz
- 480 V~, 3-phase, 60 Hz.
- 208 V~, 3-phase, 60 Hz (with the optional transformer).

A protective ground conductor is required (Class 1 Equipment). Installation Category is Overvoltage II.

Refer to *Uncrating/Installation Manual* (P920017-147) for proper connection.

IMPORTANT: Customer responsible for compliance with applicable codes and regulations.

The maximum currents and power consumptions, for units with or without drying, are:

	kW	A
• 380/400/415 V	18,6	26
• 480 V	28,3	34

2.1.2 Noise Level

Equivalent Sound Pressure Level at work station (measured 3 ft. [1 m] away from equipment and at 5 ft [1.6 m] from ground): **76.6 dB (A)** for a freestanding unit with side panels (Results determined according to *ISO-3746: 1979 Standard: Acoustics Determination of Sound Power Levels of Noise Sources Survey Method*).

2.1.3 Permissible Environmental Conditions

This washer is designed to give optimal results in an environment where maximum relative humidity is less than 85% and maximum operating temperature is 104°F (40°C).

2.2 Installation Checklist

An Equipment Drawing, showing all utility and space requirements, was sent to you after the order for this equipment was received. The clearance space, specified on Equipment Drawing (P920502-212), is necessary for proper installation, operation, and maintenance. *Uncrating/Installation Instructions* (P920017-147) were provided with the washer. If any of these documents are missing or misplaced, contact STERIS giving the serial, equipment, and model numbers of the unit. Replacement copies will be sent to you promptly.

After installing the washer according to the *Uncrating and Installation Instructions* (P920017-147), complete the following checklist to assure complete and correct installation, or contact STERIS to schedule a technician to test your installation and demonstrate proper equipment operation.

- ❑ Shutoff valves (not provided by STERIS), for maintenance purposes and capable of being locked in OFF position only, are installed on steam, air, and water lines and are in compliance with local occupational health and safety regulations, as well as plumbing codes.
- ❑ Disconnect switches (not provided by STERIS), for maintenance purposes and capable of being locked in OFF position only, are installed on electrical supply lines near the unit and are in compliance with local occupational health and safety regulations, as well as electric codes. Disconnect switches must bear the identification of the equipment to which they are connected.

NOTE: If unit is installed next to other equipment, shutoff valves and disconnect switches should be located so that service can be shut off to one piece of equipment at a time.

- ❑ Washer positioned as shown on Equipment Drawing and with required clearance space and in relation to building supply lines.
- ❑ Washer and two mechanical cores are level. Use shims or Leveling Legs (if accessory is present) if necessary.
- ❑ If Drain Discharge Cooldown System or pH Neutralizing System option is present, building cold water line supplies water to unit as specified on Equipment Drawing.
- ❑ Building hot water line supplies water to unit as specified on Equipment Drawing.
- ❑ Building steam line provides steam to unit as specified on Equipment Drawing.
- ❑ Building condensate return line is connected to washer as specified on Equipment Drawing.
- ❑ Building air line supplies air to unit as specified on Equipment Drawing.
- ❑ Building waste line is connected to washer as specified on Equipment Drawing.
- ❑ Building ventilation system is connected to washer as specified on Equipment Drawing.
- ❑ Electrical supply for unit is as specified on Equipment Drawing.
- ❑ Piping connections between washer, main mechanical core, and secondary mechanical core are as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).

- ❑ Electrical connections between washer, main mechanical core, and secondary mechanical core are as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).
- ❑ Air line connections between washer, main mechanical core, and secondary mechanical core are as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).
- ❑ If Drying System option is present, drying connections between washer, main mechanical core, and secondary mechanical core are as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).
- ❑ If Floor Ramp accessory is present, floor ramp is correctly attached to washer as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).
- ❑ If Service Side Access Panels accessory is present, service side access panels are correctly attached to washer as specified in Section 3 of *Uncrating/Installation Instructions* (P920017-147).
- ❑ Floor surrounding unit has nonslip surface.

IMPORTANT: After a few weeks of operation, inspect units for leaks. Retighten all clamps and connections.

2.3 Chemical Additives Specifications

2.3.1 General

The selection of chemical additives is open for customer preference. However, in order to achieve optimal performance, the selected chemical additives must meet as a minimum, the following specifications:

Product Description	Use Dilution Range oz/gal (mL/L)	pH Range at Use Dilution	Other Applicable Requirements
Alkaline Chemicals	1/4 - 4 (2 - 32)	9.0 - 12.0	Liquid, non foaming, and viscosity below 200 ccsu.
Acidic Chemicals	1/4 - 4 (2 - 32)	3.0 - 6.0	Liquid, non foaming, free rinsing, and viscosity below 200 ccsu.
Descalers	1/2 - 2 (4 - 16)	< 2.5	Liquid, non foaming, phosphoric acid-based, and viscosity below 200 ccsu.

NOTE: When choosing and using detergents, note the following:

1) Follow chemical label recommendations for concentration of chemical to use.

2) Follow chemical manufacturer's recommendations to determine the temperature of the WASH treatment.

3) Follow chemical manufacturer's recommendations for the amount of chemical used according to water hardness.

2.3.2 Recommended Chemical Additives

To achieve maximum cleaning efficiency, select chemical appropriate to soil type being processed. STERIS recommends the following chemicals:

- **Cage-Klenz® 100 Alkaline Cage Wash Detergent** – (Alkaline) formulated to remove urine, scale, animal fats, oils, and other organic soils from cage materials.
- **Cage-Klenz® 200 Acid-Based Wash Detergent** – (Acidic) formulated to remove urine, scale, animal fats, oils, and other organic soils from cage materials.
- **LIQUID DESCALER LIQUID SCALE REMOVER** – for removing scale and other hard water deposits. For use in animal care centers.

⚠ WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD: Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.

NOTE: Certain products may not be available in your area. Contact STERIS for availability of these products and for ordering information.

IMPORTANT: STERIS does not promote, recommend, or endorse the use of any other type of chemical additives in the processing of articles in the Basil® 9502 Cage and Rack Washer, such as drying agents, strong alkaline detergents (pH>12), alcohol rinses, and liquid germicides including hypochloric acid (bleach).

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

3.1 General

Become familiar with the location and function of all major components and controls, as well as their function before operating this unit (see Figure 3-1).

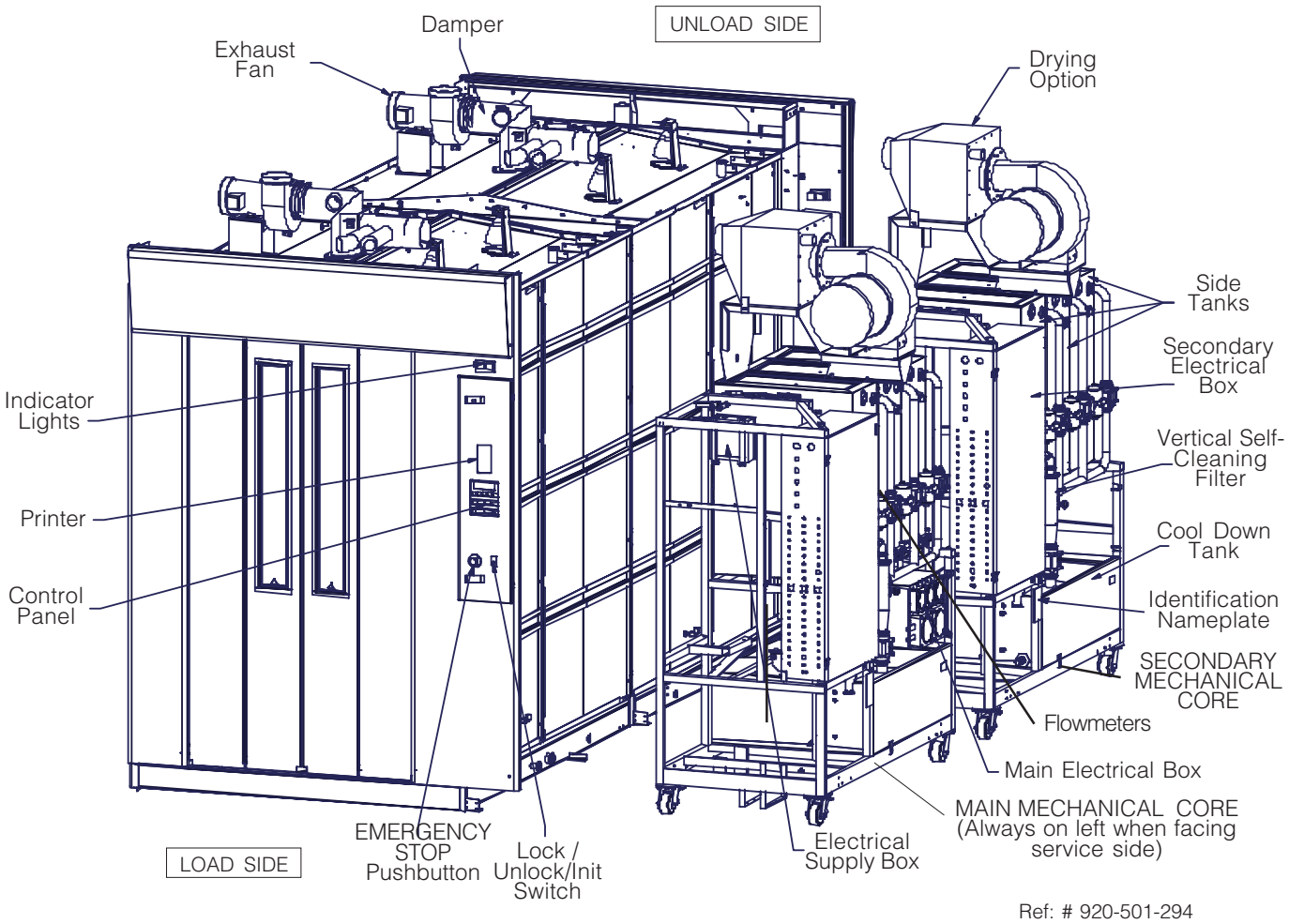


Figure 3-1. Basil® 9502 Cage and Rack Washer (Typical)

3.2 Control Location

Become familiar with all control locations and functions before operating the unit (see Figures 3-1 and 3-2).

3.2.1 LOCK/UNLOCK/INIT Key Switch

LOCK/UNLOCK/INIT key switch is located on both control panel doors and includes three positions :

- **LOCK** – To lock washer for maintenance purposes, use key to turn selector switch to the left. Positioning selector switch to LOCK position places the washer in locked mode. The operator cannot start a new cycle or enter into the Service mode.
- **UNLOCK** – Use key to turn selector switch to central position to unlock washer. Positioning switch to UNLOCK enables the washer to function normally.
- **INITIALIZATION** – Use key to turn selector to the right to reset washer normal operation after Emergency Stop Cables or Emergency Stop Button were activated, after a power up, or a power failure.

NOTE : Selector returns automatically from reset to UNLOCK position when key is released.

3.2.2 POWER-OFF/ STANDBY Switch

The POWER-OFF/STANDBY switch, located behind the printer door, includes two settings which direct operation of the control (see Figure 3-1 and 3-2):

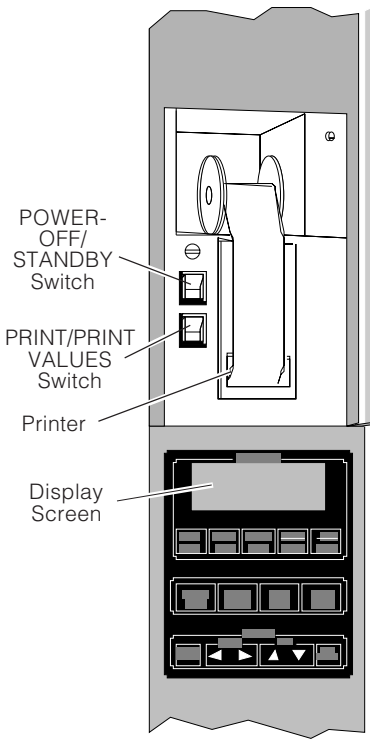
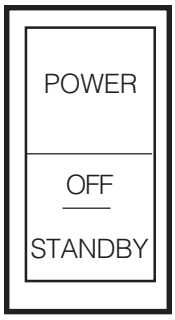


Figure 3-2. Load End Control Panel and Printer



- **POWER** – Press top portion of POWER-OFF/STANDBY switch to initialize control and place control in Ready Mode.
- **OFF/STANDBY** – Press bottom portion of POWER-OFF/ STANDBY switch to initiate Shutdown Cycle and place control in Standby Mode.

NOTE: Control should be placed in Standby Mode for last cycle of the day and when washer is not in use for an extended period of time.

IMPORTANT: POWER-OFF/STANDBY switch does not turn off electrical power to the unit.

3.3 Load-Side (Main) Control Panel

The Basil 9502 Cage and Rack Washer is equipped with a fully-programmable microprocessor control system capable of storing up to 12 cycles for processing a wide variety of loads. The control system monitors and automatically controls all cycle operations and functions.

The main control panel is used to direct all washer functions. It can be placed on either the load side or the unload side (see Figures 3-1 and 3-3). The operator may select and review cycles and treatments, start, stop, or reset cycle operation, and monitor cycle performance and washer status from the control panel.

3.3.1 Display Screen

The two-line, alphanumeric screen displays cycle program data on demand, cycle performance data and operator instructions. Display screen also indicates certain abnormal conditions that may occur during a cycle.

3.3.2 Touch Pads

- Cycle Status Touch Pads:

CYCLE MENU Touch Pad – Press to view the cycle menus. Three cycle menus are available.

SELECT CYCLE Touch Pad – Press to select one of the four cycles available from each cycle menu.

NOTE: When a displayed cycle or treatment value is selected, the corresponding word or digit flashes.

REVIEW CYCLE Touch Pad – Press to review treatments and values programmed for a selected cycle.

CYCLE/START – Press to start selected cycle.

STOP/RESET – Press once to stop cycle operation. Press a second time to abort cycle or to interrupt opening or closing of doors.

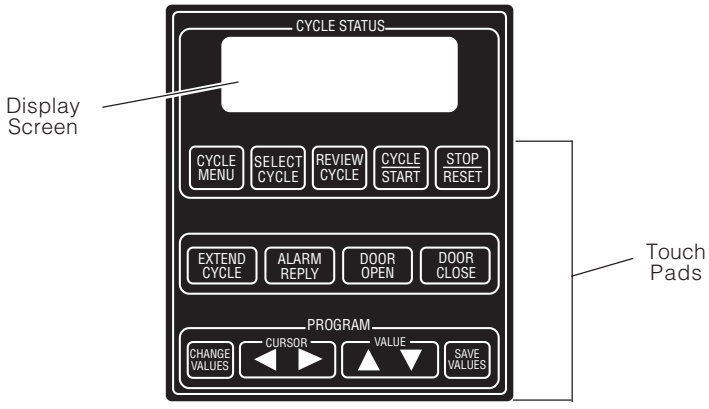


Figure 3-3. Control Panel

- Manual Operation Touch Pads:

EXTEND CYCLE Touch Pad – Available in Service Mode only.

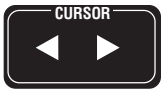
ALARM REPLY Touch Pad – Press to stop intermittent alarm buzzer and acknowledge the displayed alarm message.

DOOR OPEN Touch Pad – Press to automatically open door(s).

DOOR CLOSE Touch Pad – Press to automatically close door(s).

- Program Touch Pads:

CHANGE VALUES (CVTP) Touch Pad – Press to modify treatments from programmed cycles and to confirm selected values from programmed cycles.



CURSOR (left or right) Touch Pad- Press to move left or right on the display screen.

VALUE (up or down) Touch Pad – Press to move up or down on the display screen and, depending on selected item, press to either toggle between answer selections or to scroll through the alphabet, numbers 0 through 9, and symbols.

NOTE: Alphabet includes characters for an underline and a space (■).

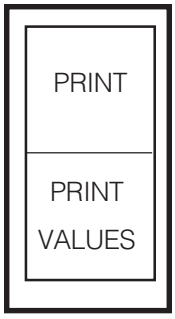
SAVE VALUES (SVTP) Touch Pad – Press to store all treatment values and cycle changes.

3.3.3 Printer

The printer, located on the right side of the load end, records all cycle data on 57 mm (2-1/4 inch) wide single-ply thermal paper. See Section 6, *Routine Maintenance,* for paper changing and paper ordering information.

Printer Function Switch

The Printer Function Switch controls two printer functions, PRINT and PRINT VALUES:



- **PRINT** – Pressing the top portion of the rocker switch generates a complete printout of the current water temperature of sump, and air temperature in drying chamber.

- **PRINT VALUES** – Pressing the bottom portion of the rocker switch generates a complete printout of all cycle values, including all treatments values, of selected cycle (cycle flashing in Cycle Menu when PRINT VALUES was pressed) (see Figure 3-6).

Press the **PRINT portion** of the rocker switch to display print menu. Display shows:

ANALOG	**CONSUMP.**
CYCLE	**DUPLICATE**

__ *indicates flashing position*

SELECT CYCLE CYCLE START

Press **SELECT CYCLE** touch pad to select a function and **CYCLE/START** touch pad to generate the selected printout.

- **ANALOG** – Generates a printout of the actual in-line heat exchanger water temperature, current air temperature at the exhaust (Drying System option), current solution temperature in cooldown tank (Drain Discharge Cooldown with Guaranteed Cooldown System with Side Tank or pH Neutralizing System options), current water pressure and current solution pH in the cooldown tank (pH Neutralizing System option) (see Figure 3-4).
- **CONSUMP** – Generates a printout of the water and chemical consumption over a determined period of time. Report can be either in **gallons** or in **liters** (see Figure 3-5).
- **CYCLE** – Generates a complete printout of all programmed cycles and treatment values (see Figure 3-6).
- **DUPLICATE** – Generates a second printout of last cycle, with or without cycle validation according to the cycle configuration.

Typical Printouts

Figure 3-7 is an example of a typical cycle printout without cycle validation for Reliance 9502 Cage and Cart Washer. Figure 3-8 is an example of a printout with cycle validation.

- **Power Up** - When POWER-OFF/STANDBY switch is set to POWER, the generated printout lists time and date the control was turned on, model and unit number (see Figure 3-9).

CYCLE START

- **Cycle Start** – When **CYCLE/START** touch pad is pressed to begin selected cycle, the generated printout lists name of selected cycle, time and date cycle was started as well as cycle number and unit serial number.

- **Cycle Performance** – During a cycle, the generated printout indicates beginning and end of each treatment.

- **End-of-cycle Performance Summary** – At the end of a cycle, the generated printout lists time the cycle was completed, total cycle processing time, and time the door was opened.

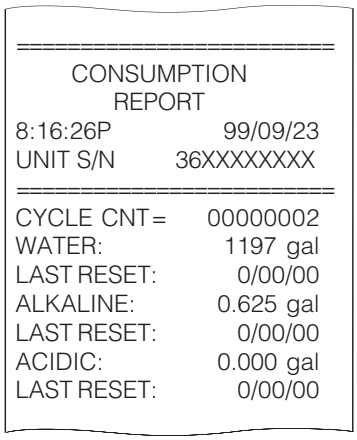
ALARM REPLY

- **Alarm Printout** – When an alarm condition occurs, the generated printout lists the type of alarm and time it occurred. Once the operator presses **ALARM REPLY** touch pad, the generated printout lists the time the alarm was acknowledged (see Figure 3-10).

NOTE : Refer to Section 7, Troubleshooting, for listing of possible alarm conditions.

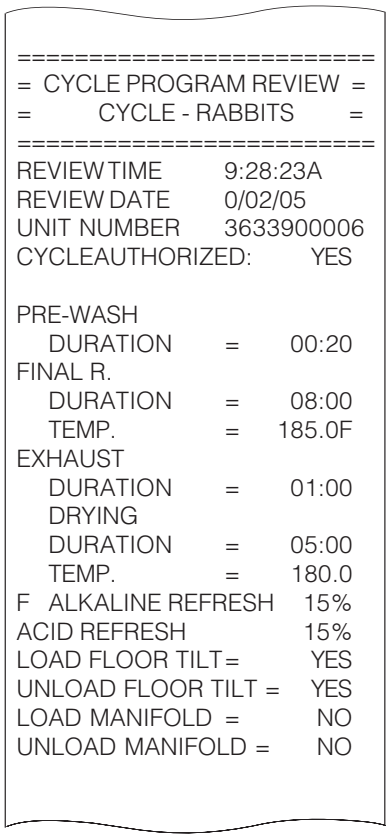
```
LOAD BST          = 88.1F
UNLOAD BST        = 89.2F
DRYING            = 80.1F
COOL DOWN         = 78.2F
```

Figure 3-4. Typical Printout if ANALOG is Selected



```
========================
      CONSUMPTION
        REPORT
8:16:26P          99/09/23
UNIT S/N       36XXXXXXXX
========================
CYCLE CNT=      00000002
WATER:           1197 gal
LAST RESET:       0/00/00
ALKALINE:       0.625 gal
LAST RESET:       0/00/00
ACIDIC:         0.000 gal
LAST RESET:       0/00/00
```

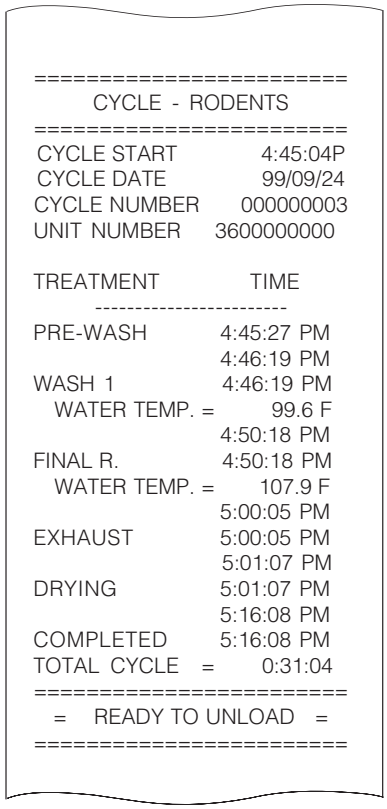
Figure 3-5. Typical Printout if CONSUMP is Selected



```
========================
= CYCLE PROGRAM REVIEW =
=       CYCLE - RABBITS      =
========================
REVIEW TIME       9:28:23A
REVIEW DATE       0/02/05
UNIT NUMBER       3633900006
CYCLEAUTHORIZED:      YES

PRE-WASH
   DURATION       =     00:20
FINAL R.
   DURATION       =     08:00
   TEMP.          =    185.0F
EXHAUST
   DURATION       =     01:00
   DRYING
   DURATION       =     05:00
   TEMP.          =    180.0
F  ALKALINE REFRESH      15%
ACID REFRESH             15%
LOAD FLOOR TILT=          YES
UNLOAD FLOOR TILT =       YES
LOAD MANIFOLD  =          NO
UNLOAD MANIFOLD =         NO
```

Figure 3-6. Typical Printout if CYCLE is Selected



```
========================
      CYCLE - RODENTS
========================
CYCLE START          4:45:04P
CYCLE DATE           99/09/24
CYCLE NUMBER      000000003
UNIT NUMBER      3600000000

TREATMENT            TIME
        ------------------------
PRE-WASH          4:45:27 PM
                  4:46:19 PM
WASH 1            4:46:19 PM
  WATER TEMP. =       99.6 F
                  4:50:18 PM
FINAL R.          4:50:18 PM
  WATER TEMP. =      107.9 F
                  5:00:05 PM
EXHAUST           5:00:05 PM
                  5:01:07 PM
DRYING            5:01:07 PM
                  5:16:08 PM
COMPLETED         5:16:08 PM
TOTAL CYCLE  =      0:31:04
========================
  =   READY TO UNLOAD   =
========================
```

Figure 3-7. Typical Cycle Printout, Without Cycle Validation

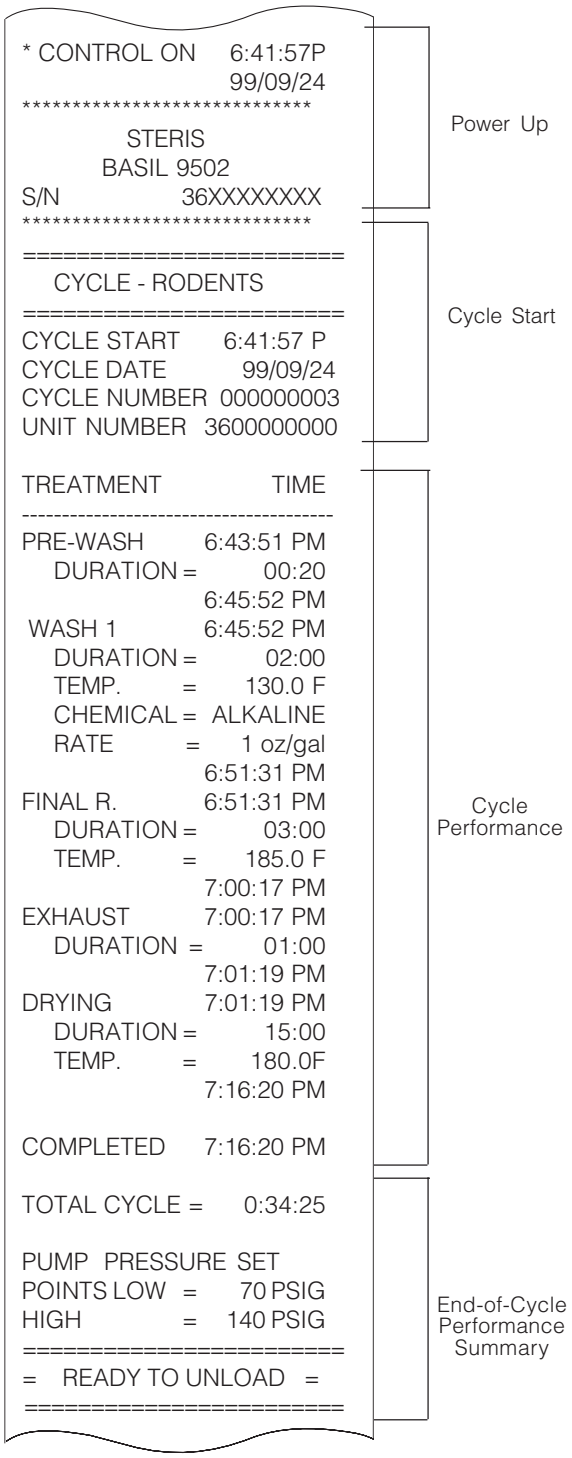


Figure 3-8. Typical Cycle Printout, with Cycle Validation

Figure 3-9. Typical POWER UP Printout

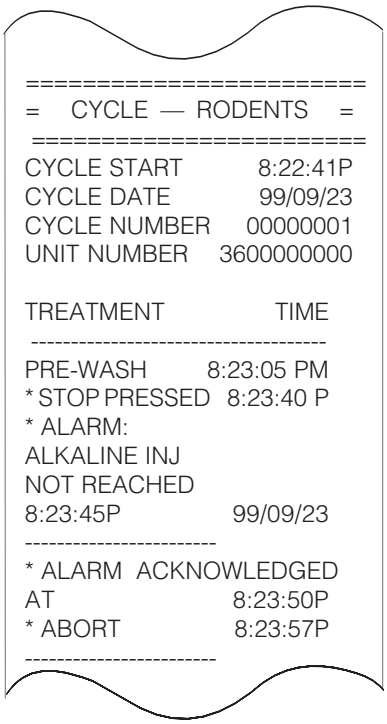


Figure 3-10. Typical Alarm Printout

3.4 Unload-Side (Remote) Control Panel

An additional control panel is installed on the unload end of the washer (see Figure 3-11). The unload side control panel features the same touch pads and display screen as the load end control panel (see Figure 3-3).

All washer functions except POWER-OFF/STANDBY and PRINT/PRINT VALUES can be directed from the unload end control panel, and the display screen concurrently shows the same message as displayed on the operating end control panel. There is no printer on the unload end control panel.

3.5 Emergency Safety Features

See Figure 3-11.

3.5.1 Photoelectric Sensors

Photoelectric sensors, located under Upper Service Panel, are installed to detect obstructions when doors are closing. Doors will automatically depressurize and stop if any obstruction is detected by the photoelectric sensors.

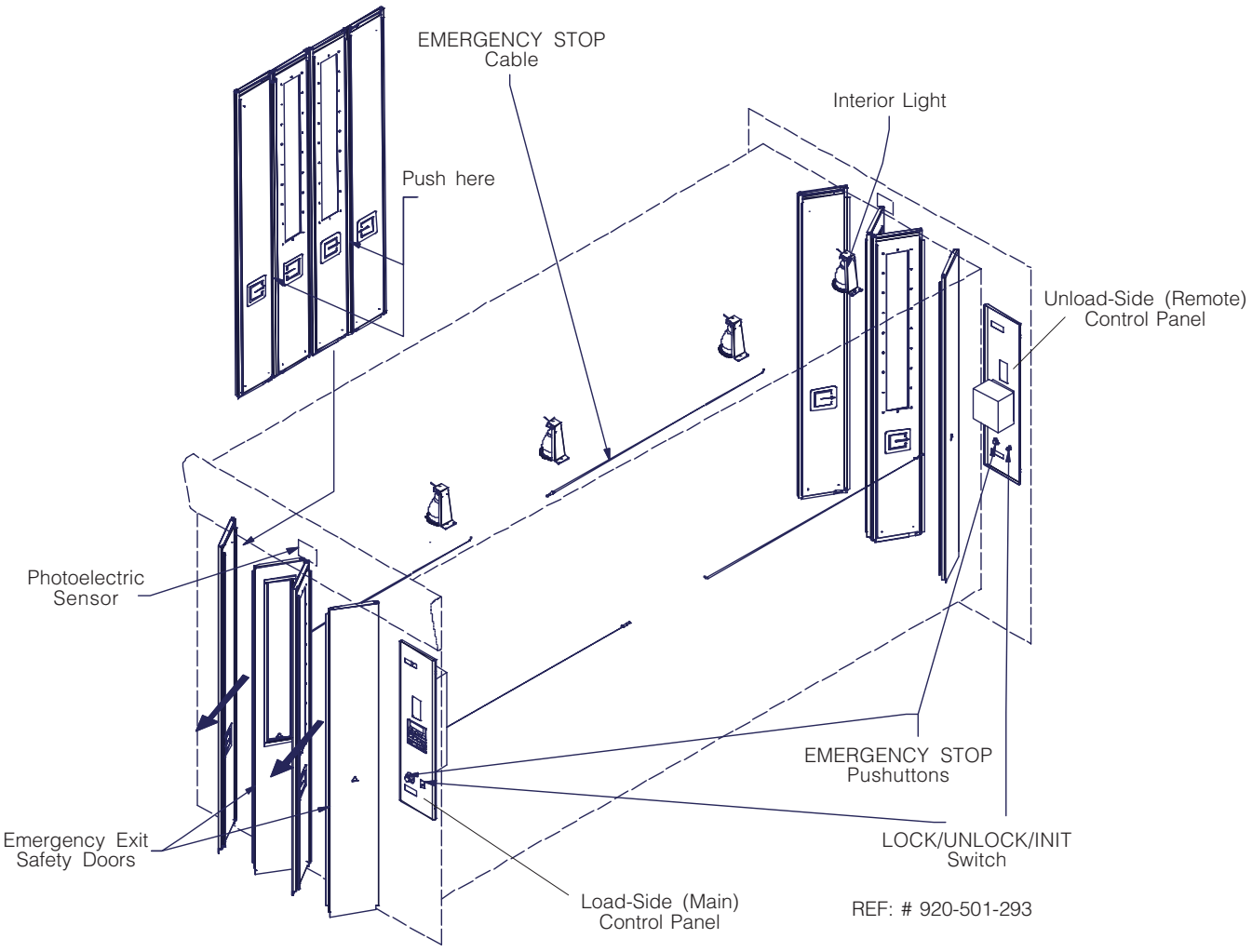


Figure 3-11. Emergency Safety Features

3.5.2 Emergency Exit Safety Doors

Door panels can be pushed out in case of an emergency, offering four emergency exit points (see Figure 3-11).

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- **To open doors from inside wash chamber, pull EMERGENCY STOP cables. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors, but between the door panels.**
- **To test or demonstrate Emergency Exit Safety Doors, first press EMERGENCY STOP pushbutton (located under control) or EMERGENCY STOP cables (inside wash chamber) to turn power OFF. If power is still on while adjusting or servicing doors, the photoelectric sensor will detect the movement of the door panels and doors will open automatically.**

3.5.3 EMERGENCY STOP Cables

Four EMERGENCY STOP cables, located on each side of wash chamber, instantly stop washer operation when pressed (see Figure 3-11).

3.5.4 EMERGENCY STOP Pushbuttons

Two EMERGENCY STOP pushbuttons located under each control panel, instantly stop washer operation when pressed.

NOTE: EMERGENCY STOP pushbuttons will cut off electrical power to control only and completely depressurize unit.

3.5.5 Interior Light

Interior light flashes once prior to cycle start, warning the operator that a cycle is about to begin.

3.5.6 Safety Delay

An adjustable Safety Delay (15 to 60 seconds), during which the washer will sound an alarm signal, has been provided to warn operator to leave the wash chamber before the cycle starts. Safety Delay is adjustable in Service Mode (see Section 4 of *Maintenance Manual* [P764330-842]). Default Safety Delay is 15 seconds.

3.5.7 LOCK/UNLOCK/INIT Key Switch

Includes three settings. Positioning switch to LOCK places washer in locked mode for maintenance purposes. When switch is in LOCK position, the operator cannot start a cycle or enter into the Service mode.

1. When key is turned to LOCK position, display shows:

WASHER LOCK

... and printer records:

WASHER LOCK
HH:MM:SS YY/MM/DD

2. As an additional safety measure, key should be removed from switch and kept by the operator until ready to unlock the washer.

3. To unlock washer, insert key in LOCK/UNLOCK/INIT switch and turn to UNLOCK position to resume normal operation.

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

4.1 Before Operating Washer

1. Verify building electrical supply disconnect switch (circuit breaker) is positioned to **ON**. Verify unit supply valves are open.
2. Verify EMERGENCY STOP pushbuttons are pulled out on Load and Unload sides of washer.
3. Verify wash chamber is empty and all material has been removed.
4. Verify debris screen in bottom of sump is clean and properly installed.
5. Open printer door and verify sufficient amount of printer paper is available.

NOTE: A colored warning stripe is visible when paper roll is near the end. See Section 6.6, Printer Paper Roll Replacement, if paper roll needs to be replaced.

6. Put POWER-OFF/STANDBY switch to POWER position. Display shows:

*	**STERIS**	*
*	**BASIL 9502**	*

... and printer records:

```
* CONTROL ON        HH:MM:SSX ———— Current Time
                    YY/MM/DD ———— Current Date

**********************************
*****     BASIL 9502   **********
****    S/N 3600000000     ****
**********************************
```

Unit Serial Number ———— S/N 3600000000

7. Side tanks fill with water (if not already full). Display screen automatically advances to the first Cycle Menu of factory-set cycles. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___indicates flashing position.

4.2 Priming Procedure

⚠ WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD:

- **Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.**
- **Detergents are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow. Read and follow the precautions and instructions on the detergent label and in the Material Safety Data Sheet (MSDS) prior to handling detergent containers, or servicing the detergent injection pumps and lines. Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing chemical injection pumps and lines.**

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE: When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

The system is self-priming and requires no specific operation. At the beginning of the cycle, display shows for example:

PRIMATES STARTING
PRIMING

If chemical flowmeters detect no detergent is being injected, an alarm buzzer sounds and display shows:

ALARM: (CHEM NAME) INJ
NOT REACHED

See Section 6.4, *Chemical Container Replacement*, for procedure on how to replace chemical containers.

To achieve maximum cleaning efficiency, select chemical appropriate to soil type being processed. See Section 2.3, *Chemical Additives Specifications*.

4.3 Doors

Inward sliding doors provide access to the wash chamber. Door movement is power controlled. When a load is placed in front of the doors, a photoelectric sensor will detect the load and doors will automatically open when washer is ready.

NOTE: The Photoelectric Sensor may be disabled in Service Mode. Refer to Section 4 of Maintenance Manual (P764330-842).

4.3.1 Door Operation

Power doors are controlled by touch pads located on the control panel (see Figures 4-1 and 3-3).

- Press **DOOR OPEN** touch pad to automatically open doors or place load under photoelectric sensor beam. Load must remain under photoelectric sensor beam for at least three seconds before doors will open.

- Press **DOOR CLOSE** touch pad to automatically close doors. Doors will not close if any obstruction is detected in front of washer or in doorway.

- Press **STOP/RESET** touch pad to interrupt opening or closing of doors.

IMPORTANT: Keep chamber doors closed between cycles and when washer is not in use.

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: To open doors from inside wash chamber, pull EMERGENCY STOP cables. Washer operation will automatically stop. Then, push firmly between door panels using shoulder and upper arm, applying upper body force. Do not push between the two doors but between the door panels.

WARNING – PERSONAL INJURY HAZARD:

- **Keep hands/fingers away from closing doors to prevent crushing between the two doors.**
- **When doors are closing, a pinch point is created at the hinges. Keep fingers away from door hinges to prevent pinching.**

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Keep away from doors to prevent load detection sensor from stopping doors from closing.

4.3.2 Interlock Feature

A door interlock feature prevents cross contamination by allowing only one door to be opened at a time. Doors can be opened one at a time when green light is on.

Load end control will energize load end doors only. Unload end control will energize unload end doors only.

NOTE: It is possible to bypass the interlock system in Service Mode (see Section 4 of Maintenance Manual P764330-842), if opening of both doors at the same time is more practical for operator.

NOTE: If operator chooses to deactivate interlock feature, pressing DOOR CLOSE or DOOR OPEN touch pads on either side of washer will automatically open or close doors on both the load and unload side.

4.3.3 Opening Doors during a Power Failure

⚠ WARNING – PERSONAL INJURY HAZARD: If doors are still slightly open (less than 2 inches [5 cm]) when power is restored after a power failure, control will apply pressure to complete closing. Lock building electrical supply disconnect switch in OFF position and close unit air supply when opening doors after a power failure.

1. Lock building electrical supply disconnect switch on **OFF** position and close unit air supply valve before opening doors manually. If not, when the power returns, doors could close automatically.
2. Wearing gloves, slide fingers between doors and slowly push the doors apart.

NOTE: If operator is inside wash chamber during a power failure, it is possible to exit through the Emergency Exit Safety Doors or by opening the doors manually.

4.4 Accessories

4.4.1 General

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Remove all cellulose-type bedding from cages and pans before processing. Cellulose bedding can clog filters and piping.

To properly clean items and to avoid personal injuries, always follow the loading guidelines. Always use a rack designed to handle the appropriate type of items to be processed.

1. Use specific accessories designed to handle cages, bottles, pans, floor grids, and cage doors:

IMPORTANT: Remove as much debris as possible from cages and pans before loading accessories

- **Bottle Washing Cart** – Used for processing up to six bottle baskets. Requires Manifolded Coupling System (option).
- **Pan Cart** – Used to wash pans, floor gratings, cage doors, etc.
- **Central Spray Header Manifold** – Used to clean and sanitize up to 200 standard mouse cages per load.
- **Rodent Cage Rack** – Used to hold up to 92 mouse cages or 32 rat cages, or shoe boxes, covers, and feeder tops.

2. Use baskets for handling and cleaning various size bottles. The lightweight basket design provides easy handling and simplifies transport and washing of bottles.
   - **5 x 5 Bottle Basket, 16 oz (454 mL) bottles** – Used to wash 25 bottles (16 oz [454 ml]).
   - **4 x 6 Bottle Basket, 16 oz (454 mL) bottles** – Used to wash 24 bottles (16 oz [454 ml]).
   - **5 x 5 Bottle Basket, 8 oz (236 mL) bottles** – Used to wash 25 short 4" (10 cm) bottles.
   - **4 x 6 Bottle Basket, 8 oz (236 mL) bottles** – Used to wash 24 tall 5-1/2" (14 cm) bottles.
3. Assure all items to be treated are correctly positioned on accessory and no items stick out or hang out of the rack.

4.4.2 How to Load Accessories Into Wash Chamber

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Always leave plenty of space between load and doors. Leaning load against doors will damage doors and also prevent them from opening or closing.

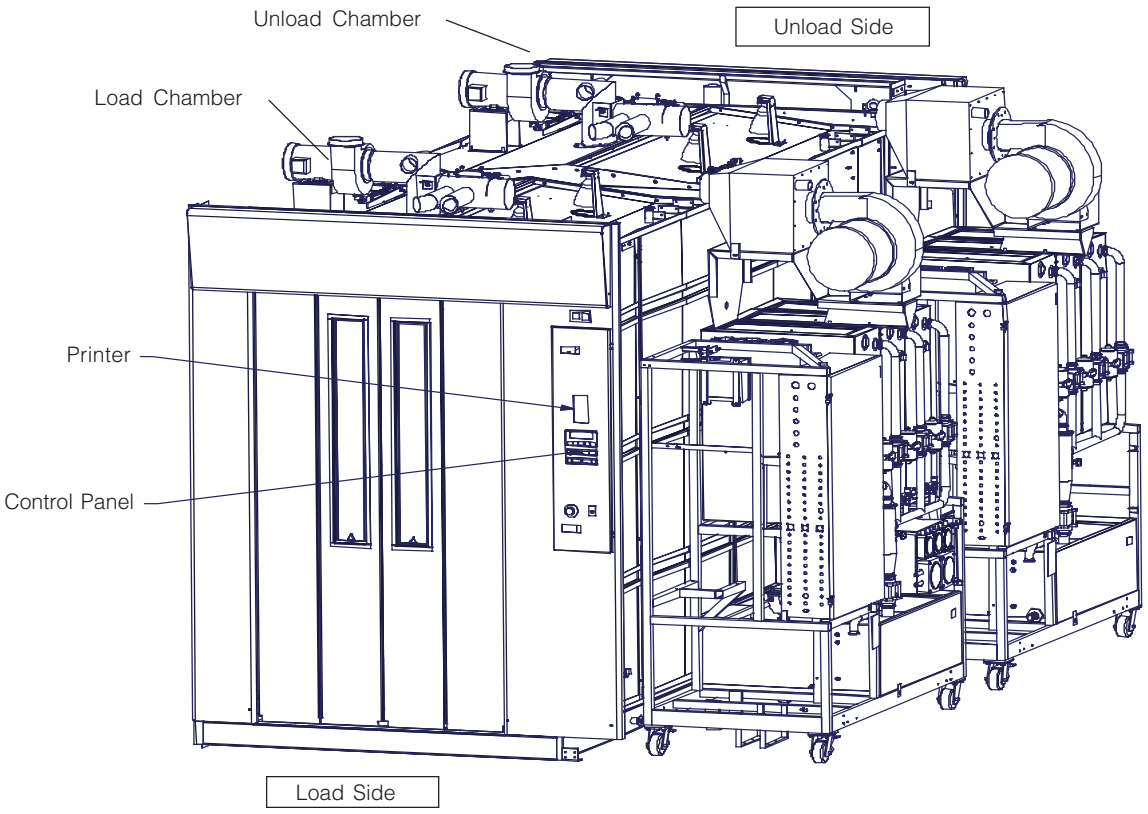
Washer chamber is composed of two sections. The section closer to the load side, is called the "load chamber". The section closer to the unload side is called the "unload chamber".

The accessories must be installed correctly in the corresponding sections of the chamber, especially accessories that need to be connected to the manifold coupling system or used with the floor tilt (see Figure 4-1).

1. Place the correctly loaded accessory cart in front of unit, on the load side under photoelectric sensor beam. Load must not touch doors, inside or outside wash chamber.

NOTE: Photoelectric sensor located above doors, under upper front access panel, must be able to detect cart. Assure cart is positioned under photoelectric sensor beam.

Left Configuration



Right Configuration

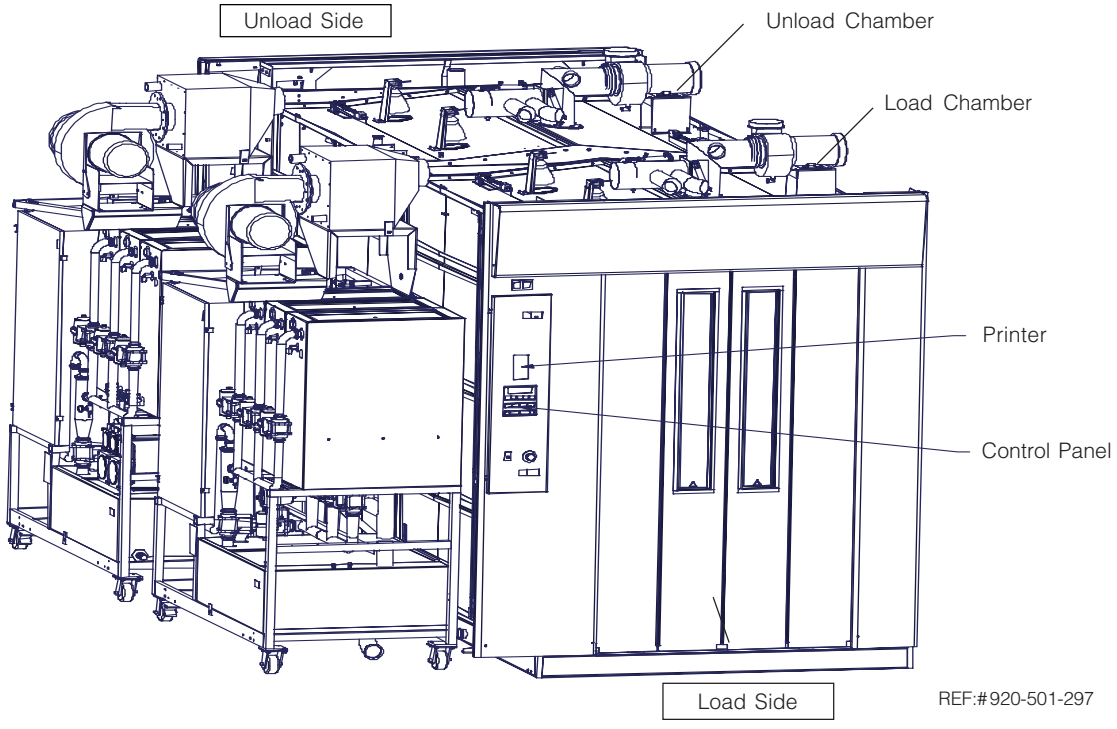


Figure 4-1. Washer Configurations

2. Wait for chamber doors to open and push loaded accessory cart into wash chamber.

   -- or --

   If photoelectric sensor is disabled, press **DOOR OPEN** touch pad to open door and push cart into wash chamber. For procedure on how to disable photoelectric sensor in Service Mode, see Section 4 in *Maintenance Manual* (P764330-842).

4.4.3 How to Load Central Header Manifold with Rodent Cage Racks (Accessory)

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Always position manifolded Bottle Washing Cart and/or Central Header Manifold over central water inlet connector. If manifolded accessory is not positioned correctly, damage may result and unit will be unable to effectively wash load.**
- **Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.**

IMPORTANT: If the Central Header Manifold is used, assure Floor Tilting option IS NOT ACTIVATED in the wash chamber where it is positioned (see Section 5, *Cycle and Control Value Programming*).

1. When doors are open, enter wash chamber and roll Central Spray Header Manifold and Support (see Figure 4-2) along central rails until top of header is aligned with roof locking support.
2. Unlock safety locking pin retaining Central Header Manifold to support.
3. Align manifold at the bottom of the accessory with the water inlet connector at the bottom of the wash chamber.
4. Push up locking handle towards roof locking support and turn clockwise to secure header into position.
5. Roll Support out from wash chamber.
6. Roll Rodent Cage Racks (see Figure 4-3) along Central Spray Header Manifold inside wash chamber.

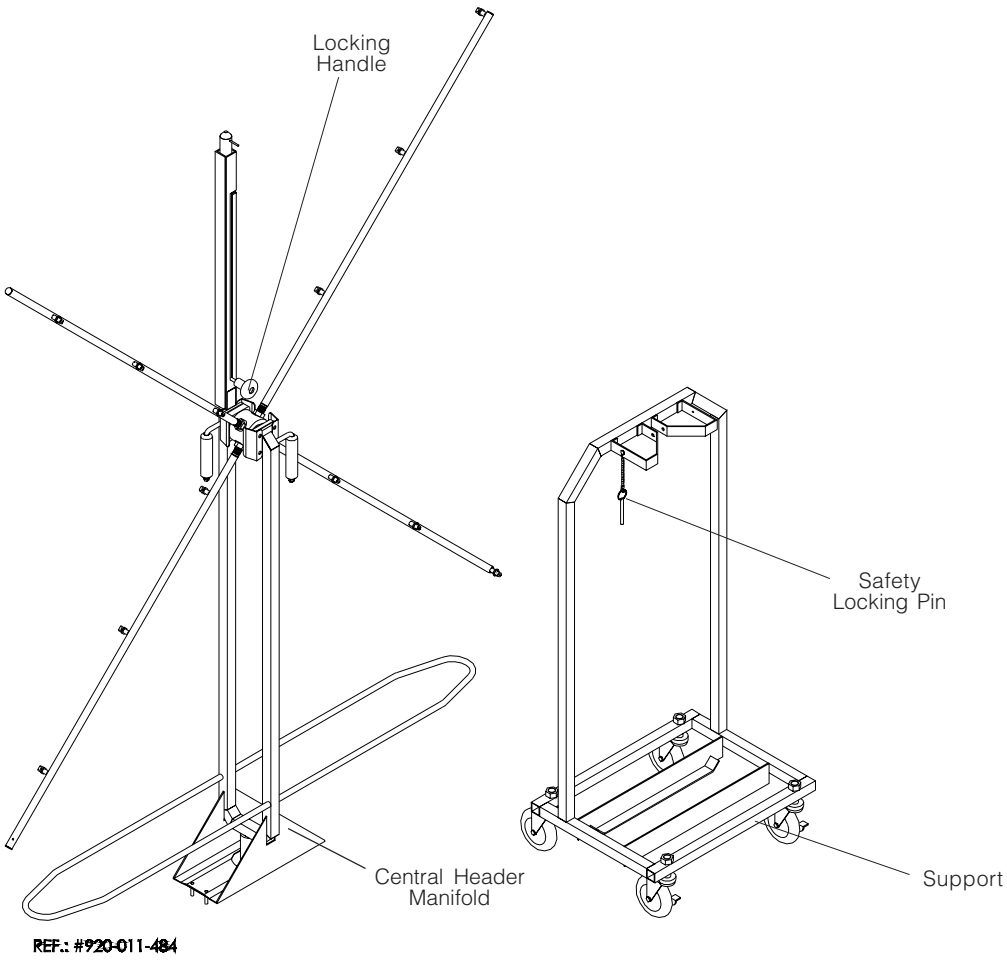


Figure 4-2. Central Header Manifold and Support

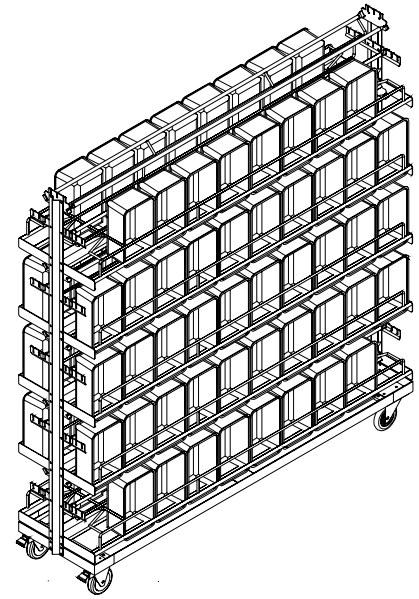


Figure 4-3. Rodent Cage Rack

4.4.4 How to Load Bottle Washing Cart or Universal Cage and Pan Wash Cart (Accessory)

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE:

- **Always position manifolded Bottle Washing Cart and/or Central Header Manifold over central water inlet connector. If manifolded accessory is not positioned correctly, damage may result and unit will be unable to effectively wash load.**
- **Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.**

IMPORTANT: If the manifolded Bottle Washing Cart is used, assure Floor Tilting option IS NOT ACTIVATED in the wash chamber where it is positioned (see Section 5, *Cycle and Control Value Programming*).

1. When doors are open, roll correctly loaded Bottle Washing Cart (see Figure 4-4) or Universal Cage and Pan Wash Cart (see Figure 4-5) along guiding rails.
2. Push until wheels are positioned between stoppers on rails.
3. Assure water inlet connector at bottom of wash chamber is aligned with manifold on bottle washing cart.

Figure 4-4. Bottle Washing Cart

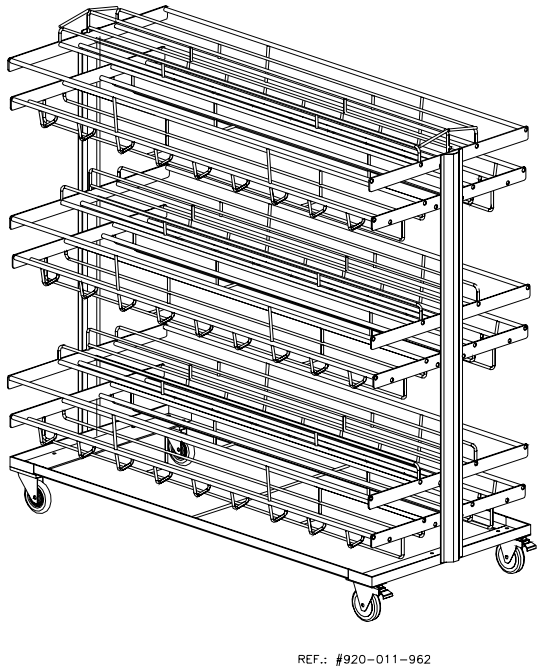


Figure 4-5. Universal Cage and Pan Wash Cart

4.5 Typical Cycle Operation

The Basil® 9502 Cage and Rack Washer is pre-programmed at factory with four processing cycles and two maintenance cycles, and is capable of retaining up to six additional cycles (see **Table 5-1**). Each cycle can be customized to include up to seven different treatments. For instructions on programming, refer to Section 5, *Cycle and Control Value Programming*.

The following cycle description is based on the pre-programmed PRIMATES cycle. See **Table 4-1** for default treatment values of the PRIMATES cycle.

NOTE: Note the following regarding the typical cycle:

*1) Washer operation can be interrupted at any time by pressing **STOP/RESET** touch pad. To resume cycle, press **CYCLE/START** touch pad. To abort cycle, press **STOP/RESET** touch pad a second time.*

2) After washer operation has been interrupted, a 60-second delay will prevent doors from opening before it is safe to do so. Operator must wait until the end of the delay before opening doors.

3) If unit fails or if any abnormal condition occurs during a cycle, see Section 7, Troubleshooting, to identify the possible cause and corrective action.

1. Once washer is properly loaded, press **DOOR CLOSE** touch pad to close doors. The first Factory-set Cycle Menu appears on the screen. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___ *indicates flashing position*

NOTE: To access one of the other two cycle menus, press CYCLE MENU touch pad.

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE: Avoid product damage. Always select a cycle appropriate for the items being processed.

2. Press **SELECT CYCLE** touch pad to select PRIMATES cycle from the displayed menu.

3. When desired cycle is selected (cycle name is flashing on display screen), press **CYCLE/START** touch pad. The name of the selected cycle appears on the screen and remains displayed during the safety delay. Display shows:

PRIMATES STARTING
PRIMING

... then:

Name of Cycle Started	**PRIMATES STARTING**
Safety Delay Countdown	**MM:SS**

Treatment Name	Time (min:sec)	Water/Air Temp.
Pre-wash	00:20	N/A
Wash 1	06:00	130°F/54°C
Rinse	00:00	N/A
Wash 2*	06:00	160°F/71°C
Rinse	00:00	N/A
Final Rinse	02:00	185°F/71°C
Exhaust	01:00	N/A
Drying*	10:00	180°F/82°C

*Option

Table 4-1. Default Treatments and Settings for PRIMATES Cycle

4. After the safety delay has elapsed (15 seconds default, adjustable in Service Mode, see Section 4 in *Maintenance Manual* P764330-842), washer automatically progresses through the following programmed treatments.

   - **PRE-WASH:** Solution from Tank 2 is sprayed over load for 20 seconds (factory set) and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Pre-wash is non-recirculated.
   - **WASH 1:** Load is washed with 130°F (54°C) heated solution from Tank 1 for 6 minutes (factory set).
   - **RINSE:** Water from Tank 2 is sprayed over load and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Rinse is non-recirculated.
   - **WASH 2 (Option):** Load is washed with 160°F (71°C) heated solution from Tank 3 (factory set) for 6 minutes (factory set).
   - **RINSE:** Water from Tank 2 is sprayed over load and sent directly to drain (or to Drain Discharge Cooldown Tank if option is present). Rinse is non-recirculated.

NOTE: Not available in PRIMATES Cycle (factory set).

   - **FINAL RINSE:** Load is rinsed with 185°F (85°C) heated water from Tank 2 for 2 minutes (factory set).

NOTE: RINSE phase timer will be started only when 185°F (85°C) is reached.

   - **VAPOR EXHAUST:** Residual vapor is removed from chamber for 1 minute (factory set).
   - **DRYING (Option):** Load is dried at 180°F (82°C) (factory set) for 10 minutes (factory set). Drying is non-recirculated.

5. The following is an example of the sequence of displays while a treatment is in progress:

PRIMATES	**WASH 1**
FILLING	

.. then:

PRIMATES	**WASH 1**	
INJECTING		*Detergent Injection Phase*

.. then:

Name of Cycle Started	**PRIMATES**	**WASH 1**	*Treatment in Progress*
Phase in Progress	**CIRCULATE**	**MM:SS***	*Phase Countdown*

NOTE: During Final Rinse treatment, countdown will start only when temperature set point is reached.

... alternating with:

PRIMATES	**WASH 1**	
SET POINT	**XXX.X F**	*Temperature Setpoint*

... alternating with:

Current Temperature in Load Chamber	**PRIMATES** **___ XXX.X F**	**WASH 1** **XXX.X F ___**	*Current Temperature in Unload Chamber*

...then:

PRIMATES **VAPOR REM**	**EXHAUST** **MM:SS**

...then, **if Drying System option is present**, display shows:

PRIMATES	**DRYING** **MM:SS**

When cycle treatments are completed, display shows:

PRIMATES COMPLETED

Beep sounds and display shows:

PLEASE OPEN DOOR **AND REMOVE THE LOAD**

DOOR OPEN

6. Open chamber door by pressing on **DOOR OPEN** touch pad or by simply stepping in front of doors. Leave doors open and allow load to cool before removing accessory headers. Display screen returns to cycle menu. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___ indicates flashing position

IMPORTANT: When cycle is completed, unload door must be opened and then closed before another cycle may be started.

WARNING–BURN HAZARD: Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber.

WARNING – SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

4.6 DRAIN Cycle

DRAIN cycle can be performed whenever necessary, after each cycle, between different load types, or at the end of a work session.

CYCLE MENU

1. Press **CYCLE MENU** touch pad to scroll to appropriate cycle menu. Display shows:

CYCLE 9	**CYCLE 10**
DRAIN	**DESCALER**

___ indicates flashing position

SELECT CYCLE

2. Press **SELECT CYCLE** touch pad to select DRAIN Cycle. Display shows:

CYCLE 9	**CYCLE 10**
DRAIN	**DESCALER**

___ indicates flashing position

CYCLE START

3. Press **CYCLE/START** touch pad to confirm. Display shows:

PURGE TRAVELERS?	
CVTP=YES	**SVTP=NO**

NOTE: Purging travelers will also purge Rinse Tank (Tank 2).

CHANGE VALUES SAVE VALUES

4. Press **CHANGE VALUES** touch pad to purge travelers or press **SAVE VALUES** touch pad to skip to the next question. Display shows:

DRAIN ALL TANKS?	
CVTP=YES	**SVTP=NO**

CHANGE VALUES

5. Press **CHANGE VALUES** touch pad to select YES and drain all tanks. Control will automatically move to **Step 9**.

-- or --

SAVE VALUES

Press **SAVE VALUES** touch pad to select NO and choose which tanks to drain. Display shows:

DRAIN ALKALINE	
CVTP=YES	**SVTP=NO**

CHANGE VALUES SAVE VALUES

6. Press **CHANGE VALUES** touch pad to drain Alkaline Tank (Tank 1), or press **SAVE VALUES** touch pad to keep tank filled. Display shows:

DRAIN RINSE?	
CVTP=YES	**SVTP=NO**

*NOTE: The display is only shown if **NO** has been selected in answer to **PURGE TRAVELERS?***

CHANGE VALUES SAVE VALUES

7. Press **CHANGE VALUES** touch pad to drain Rinse Tank (Tank 2), or press **SAVE VALUES** touch pad to keep tank filled. Display shows:

DRAIN ACID?	
CVTP=YES	**SVTP=NO**

NOTE: The display appears only if Additional Wash Tank option is present.

8. Press **CHANGE VALUES** touch pad to drain Acid Tank (Tank 3), or press **SAVE VALUES** touch pad to keep tank filled. Display shows:

REFILL AFTER DRAIN?	
CVTP=YES	**SVTP=NO**

9. Press **CHANGE VALUES** touch pad to select YES to refill selected tanks after draining is completed.

   -- or --

   Press **SAVE VALUES** touch pad to select NO and leave selected tanks empty after draining is completed.

10. Washer drains selected tanks.

IMPORTANT: At the end of a work session, the washer should be completely drained.

4.7 Pause Cycle Operation

1. Press **STOP/RESET** touch pad once to interrupt cycle operation. Pressing **STOP/RESET** touch pad once interrupts cycle and removes remaining water and vapor from wash chamber. Display shows:

VAPOR EXHAUST
PLEASE WAIT

... and printer records:

*STOP PRESSED HH:MM:SSXM

IMPORTANT: Unit has a built-in 60-second (approximately) delay to prevent doors from opening before washer is in a safe state. Operator must wait until the end of the delay before opening doors. Display shows:

CYCLE IS PAUSED
START TO CONTINUE OR

... alternating with:

CYCLE IS PAUSED
PRESS STOP TO ABORT

WARNING–BURN HAZARD:

- **After pressing STOP/RESET touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.**
- **Except for emergency, do not open door when cycle is in progress. In an emergency, first stop cycle by pressing the EMERGENCY STOP pushbutton and wait for water flow to stop. Wear appropriate Personal Protective Equipment (PPE) whenever reaching into or entering wash chamber.**
- **Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber.**

2. Press **CYCLE/START** touch pad to resume cycle operation. Treatment resumes where it was interrupted. Printer records:

*CYCLE RESUME HH:MM:SSXM

-- or --

Press **STOP/RESET** touch pad to abort cycle (see Section 4.8, *Abort Cycle Operation*).

4.8 Abort Cycle Operation

When cycle is in progress, press **STOP/RESET** touch pad twice to abort cycle. Display shows:

ABORTING
IN PROGRESS

..and printer records:

*STOP PRESSED	HH:MM:SSXM
*ABORT	HH:MM:SSXM

IMPORTANT: Unit has a built-in 60-second (approximate) delay to prevent doors from opening before it is safe. Operator must wait until the end of the delay before opening doors.

⚠ WARNING–BURN HAZARD:

- **After pressing STOP/RESET touch pad, wait until water flow stops before opening doors. Hot water/steam may be sprayed through door opening if doors are opened too soon.**
- **Inner surfaces of washer are very hot after cycle completion. Operator should wear appropriate personal protective equipment (PPE) and avoid all contact with inner walls when entering chamber.**

4.9 Acknowledge Alarm Condition

If an alarm condition occurs during cycle operation, an alarm buzzer sounds to notify operator (see Section 7, *Troubleshooting*, for a list of alarm conditions and their possible solution).

An alarm message appears on the display screen. Display shows, for example:

ALARM: WATER
TOO LONG TO HEAT

... and the printer lists the type of alarm and time it occurred:

*ALARM:
WATER
TOO LONG TO HEAT
HH:MM:SSX YY/MM/DD

1. Press **ALARM REPLY** touch pad to silence alarm buzzer and acknowledge the displayed alarm message. Printer records time the alarm was acknowledged. Printer records:

   ALARM ACKNOWLEDGED
   AT HH:MM:SSX

   Unit performs an Exhaust Vapor Removal phase during one minute. Display shows :

   VAPOR EXHAUST
   PLEASE WAIT

   IMPORTANT: Unit has a built-in 60-second (approximately) delay to prevent doors from opening before it is safe. Operator must wait until the end of the delay before opening doors. Display shows:

   CYCLE IS PAUSED
   START TO CONTINUE OR

   ... alternating with:

   CYCLE IS PAUSED
   PRESS STOP TO ABORT

2. Press **CYCLE/START** touch pad to resume cycle operation or **STOP/RESET** touch pad to abort cycle.
3. Before operator can restart a cycle, washer must be re-initialized using the LOCK/UNLOCK/INIT key switch is located on either the load or unload side control panel doors

- **INITIALIZATION** – Use key to turn selector to the right to reset washer normal operation after EMERGENCY STOP cables, or EMERGENCY STOP pushuttons were activated, after a power up, or a power failure.

NOTE : Selector returns automatically from reset to UNLOCK position when key is released.

4.10 Shutdown

Two different ways of performing the Shutdown Cycle are available to the operator: manual or automatic.

4.10.1 Manual Shutdown

1. Position POWER-OFF/STANDBY switch to OFF/STANDBY position.
2. After a one-minute delay, SHUTDOWN Cycle starts. A drain phase is performed on tanks 1, 2, and 3 (option). If Drain Discharge Cooldown Tank option is present, drain phase will take longer. There is a one-minute delay before draining starts. Display shows:

SHUTDOWN IN MM:SS **POWER ON TO ABORT**

NOTE: During the one-minute delay before SHUTDOWN Cycle starts, operator may return washer to the Ready Mode by positioning POWER-OFF/STANDBY switch to POWER.

3. When safety delay time has elapsed, shutdown starts. All tanks start draining. Display shows:

SHUTDOWN IN PROGRESS **PLEASE STANDBY**

... alternating with:

SHUTDOWN IN PROGRESS **MM:SS**

... and printer records:

```
==========================
SHUTDOWN

HH:MM:SSX                 YY/MM/DD
UNIT S/N 36XXXXXXXX
==========================
DRAINING:                 HH:MM:SSX
```

4. When countdown has elapsed and **if Drain Discharge Cooldown option is present**, display shows:

SHUTDOWN IN PROGRESS **COOLDOWN TANK**

5. When draining is completed, display shows:

HH:MM:SS

... and printer prints:

```
==========================
* CONTROL OFF

HH:MM:SSX                 YY/MM/DD
UNIT S/N 36XXXXXXXX
==========================
                          HH:MM:SS
                          YY/MM/DD
```

4.10.2 Automatic Shutdown

Automatic Shutdown may be programmed to start automatically at a given time of the day to suit customer needs (default 17:30, adjustable in Service Mode, see Section 4 in *Maintenance Manual* [P764330-842]).

1. If a cycle is in progress, Automatic Shutdown will be performed once cycle has been completed.
2. Before Automatic Shutdown starts, there is a one-minute countdown during which Automatic Shutdown may be bypassed.

NOTE: When Automatic Shutown is programmed, note the following:

1) To bypass Automatic Shutdown, position POWER-OFF/STANDBY Switch to OFF/STANDBY then to POWER.

2) To disable Automatic Shutdown, set shutdown time to 24:00 in Automatic Mode.

3. If Automatic Shutdown is processed, see Section 4.10.1, *Manual Shutdown*, for sequence of displays and printouts.

CYCLE AND CONTROL VALUE PROGRAMMING 5

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

5.1 General

The microcomputer control of the Basil® 9502 Cage and Rack Washer allows the adjustment of programmed cycles and the creation of new cycles. Using this feature, cycles may be customized to process different types of loads.

The washer is preprogrammed with four basic cycles: RODENTS, BOTTLES, RABBITS, and PRIMATES. These cycles are programmed with treatments and treatment values to which the control will default in the case of battery or memory failure.

The control is also capable of storing parameters for up to six custom cycles. In addition to these ten programmable cycles, there are two cycles that cannot be modified: DRAIN and DESCALER, which are used for maintenance purposes.

The following chart summarizes the unit default values and parameters for customized cycles.

See **Table 5-1** for the cycle default values and treatment parameters.

Table 5-1. Basil 9502 Cage and Rack Washer – Cycle Description Chart

ADJUSTABLE CYCLE PARAMETERS

	PRE-WASH	WASH 1	MID-RINSE	WASH 2 (OPTIONAL)	RINSE	FINAL RINSE	VAPOR EXHAUST	DRY (OPTIONAL)	FLOOR TILTING LOAD CHAMBER	MANIFOLD COUPLING LOAD CHAMBER	FLOOR TILTING UNLOAD CHAMBER	MANIFOLD COUPLING UNLOAD CHAMBER
SELECTIONS	*NON-RECIRCULATED*	*RECIRCULATED*	*NON-RECIRCULATED*	*RECIRCULATED*	*NON-RECIRCULATED*	*RECIRCULATED*		*NON-RECIRCULATED*	***YES OR NO***	***YES OR NO***	***YES OR NO***	***YES OR NO***
SELECTABLE TANKS	*RINSE*	*ALKALINE OR ACID*	*RINSE*	*ACID OR ALKALINE*	*RINSE*	*RINSE*						
INJECTION RANGE		*0 OZ/GAL- 4 OZ/GAL (0 ML/L - 32 ML/L)*		*0 OZ/GAL- 4 OZ/GAL (0 ML/L - 32 ML/L)*								
DURATION RANGE	*00:20*	*00:00 - 10:00*	*00:20*	*00:00 - 10:00*	*00:20*	*00:00 - 08:00*	*01:00 - 05:00*	*00:00 - 15:00*				
LOAD TEMPERATURE RANGE		*120°F - 165°F (49°C - 74°C)*		*120°F - 165°F (49°C - 74C)*		*¤160°F-185°F (71°C - 85°C)*		*140°F - 180°F (60°C - 82°C)*				
TANKS REFRESH RATE		*15 % TO 100 %*		*15 % TO 100 %*								

PRE-PROGRAMMED CYCLES FACTORY SETTINGS

		PRE-WASH	WASH 1	MID-RINSE	WASH 2	RINSE	FINAL RINSE	VAPOR EXHAUST	DRY	FLOOR TILTING LOAD CHAMBER	MANIFOLD COUPLING LOAD CHAMBER	FLOOR TILTING UNLOAD CHAMBER	MANIFOLD COUPLING UNLOAD CHAMBER
RODENTS	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*			***NO***	***NO***	***NO***	***NO***
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*IF SELECTED*								
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*03:00*	*01:00*	*15:00*				
	TEMPERATURE		*130°F (54°C)*		*IF SELECTED*		*185°F (85°C)*		*180°F (82°C)*				
	TANK REFRESH RATE		*15%*		*IF SELECTED*								
BOTTLES	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*			***NO***	***YES***	***NO***	***YES***
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*IF SELECTED*								
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*03:00*	*01:00*	*15:00*				
	TEMPERATURE		*130°F (54°C)*		*IF SELECTED*		*185°F (85°C)*		*180°F (82°C)*				
	TANK REFRESH RATE		*15%*		*IF SELECTED*								
RABBITS	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*ACID*	*RINSE*	*RINSE*			***YES***	***NO***	***YES***	***NO***
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*2 OZ/GAL (16 ML/L)*								
	DURATION	*00:20*	*02:00*	*IF SELECTED*	*08:00*	*IF SELECTED*	*02:00*	*01:00*	*10:00*				
	TEMPERATURE		*130°F (54°C)*		*160°F (71°C)*		*185°F (85°C)*		*180°F (82°C)*				
	TANK REFRESH RATE		*15%*		*15%*								
PRIMATES	***SELECTED TANK***	*RINSE*	*ALKALINE*	*RINSE*	*ACID*	*RINSE*	*RINSE*			***YES***	***NO***	***YES***	***NO***
	INJECTION RATE		*1 OZ/GAL (8 ML/L)*		*2 OZ/GAL (16 ML/L)*								
	DURATION	*00:20*	*06:00*	*IF SELECTED*	*06:00*	*IF SELECTED*	*02:00*	*01:00*	*10:00*				
	TEMPERATURE		*130°F (54°C)*		*160°F (71°C)*		*185°F (85°C)*		*180°F (82°C)*				
	TANK REFRESH RATE		*15%*		*15%*								
CYCLE 5 TO CYCLE 10	***SELECTED TANK***	*RINSE*	*IF SELECTED*	*RINSE*	*IF SELECTED*	*RINSE*	*RINSE*			***NO***	***NO***	***NO***	***NO***
	INJECTION RATE		*IF SELECTED*		*IF SELECTED*								
	DURATION	*00:20*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*IF SELECTED*	*01:00*	*IF SELECTED*				
	TEMPERATURE		*IF SELECTED*		*IF SELECTED*		*IF SELECTED*		*IF SELECTED*				
	TANK REFRESH RATE		*15%*		*IF SELECTED*								

	PHASES	DETAILS	
		MANUAL	AUTOMATIC
DESCALER	1 - DRAIN TANKS 1 & 2 (3 optional) & PIPING		
	2 - FILL TANKS 1 & 2 (3 optional)		
	3 - FILL THE SUMP WITH TANKS 1, 2 or (3 optional)	CONTROL INDICATES OPERATOR TO ADD DESCALER IN EACH CHAMBER FOR EACH TANK	DESCALER INJECTION IN EACH CHAMBER
	4 - RECIRCULATE EACH TANK	5 MINUTES EACH TANK , 180°F MAINTAINED, NOT GUARANTEED	5 MINUTES EACH TANK , 180°F MAINTAINED, NOT GUARANTEED
	5 - DRAIN ALL TANKS	3 MINUTES EACH TANK, 120°F	3 MINUTES EACH TANK , 120°F
	6 - FILL TANKS 1 & 2 (3 optional)		
	7 - RECIRCULATE EACH TANK	5 MINUTES EACH TANK , 180°F MAINTAINED, NON GUARANTEED	5 MINUTES EACH TANK , 180°F MAINTAINED, NON GUARANTEED
	8 - VAPOR EXHAUST	1 MINUTE EACH TANK	1 MINUTE

DESCALER cycle can not be altered.

DRAIN	This cycle enables draining of TANKS 1, 2 & 3 (Optional), Purge Spray Headers

¤Final Rinse temperature can be modified in Service Mode only. Modifying Final Rinse temperature can impact on the efficiency of the treatment. STERIS does not recommend performing a Thermal Rinse at a temperature below 185°F (85°C).

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5.2 Change Values Mode

The Change Values Mode allows authorized operators to modify treatment values of existing cycles or modify miscellaneous operating values.

All the values can be secured (or "locked-out") using a supervisor Access Code.

5.2.1 Sequence of Display Screens

In Change Values Mode, cycles are modified or created by selecting a treatment, then by modifying its values. The process is repeated for each selected treatment until a customized cycle is completed.

Treatment values appear on the display screen in a sequential order which is the same for all preprogrammed or custom cycles.

Treatments may be bypassed by setting time values to 0 except for PRE-WASH and EXHAUST.

NOTE: In the following sequence, tank and chemical names used are default factory-set names. Tank and chemical names may be changed in Service Mode to meet customer needs (see Section 4 of Maintenance Manual [P764-330-842]).

5.2.2 How to Modify a Cycle

The following procedure shows how to modify a cycle.

1. Position POWER/OFF-STANDBY switch, located behind printer door, to POWER. Unit name temporarily appears on the screen. Display shows:

*	**STERIS**	*
*	**BASIL 9502**	*

... then, the first Cycle Menu appears. Display shows:

RODENTS	**BOTTLES**	Factory-set Cycles
RABBITS	**PRIMATES**	

__indicates flashing position.

*NOTE: To scroll through available cycle menus, press **CYCLE MENU** touch pad.*

2. Press **SELECT CYCLE** touch pad until desired cycle name flashes. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__indicates flashing position.

3. If Access Code feature is enabled, operator must enter Access Code before entering Change Values Mode.

The **Access Code** feature is used to prevent unauthorized changes to the parameters of designated cycles and/or operating values by unauthorized operators. With this feature, access to cycle values may be selectively limited to authorized operators only, depending on the security needs of the washer environment. When Access Code is enabled, only authorized operators can change operating values.

ADVANTAGES OF ENABLING OR DISABLING ACCESS CODE: Enabling or disabling the Access Code can impact the efficiency of washing operations. For that reason, the supervisor should carefully consider the choices: if the Access Code is **ON**, the supervisor can ensure operators use the washer within predetermined parameters; if the Access Code is **OFF**, the supervisor can allow operators more flexibility in determining which cycles to use and how to use them. The deciding factor should be what works best for the facility's operation.

NOTE: The ACCESS CODE feature can be enabled in Service Mode only (see Section 4 of Maintenance Manual [P764-330-842]),

4. Press **CHANGE VALUES** touch pad to confirm cycle selection. If Access Code feature has been enabled, display shows:

ENTER OPERATOR
ACCESS CODE : 0000

5. To enter correct Access Code, press **VALUE** (up or down) touch pad to select position and **CURSOR** (left or right) touch pad to select desired number (0-9). The Access Code is input as a four-digit number from 0001 to 9999.

6. Once proper Access Code is entered, press **CHANGE VALUES** touch pad to access the Change Values Mode. The printer records:

*CHANGE VALUE 8:44:51A

...and display shows the first Change Values Mode message:

CVTP = MODIFY CYCLE
SVTP = ERASE CYCLE

NOTE: When Access Code feature is activated, note the following:

*1) If SAVE VALUES touch pad is pressed, display will show Date and Time. To modify Date and/or Time, see **Steps 49 and 50**.*

*2) If wrong Access Code is entered, display shows "ACCESS DENIED!" and printer records: "*ACCESS DENIED!8:44:51A" (time at which access to Change Value menu was denied).*

3) If access is denied, display defaults to main cycle menu.

7. Press **SAVE VALUES** touch pad to reset selected cycle values to the factory-set values. Cycle will revert to its original default preprogrammed values.

-- or --

8. Press **CHANGE VALUES** touch pad to modify cycle values. Display shows:

CHANGE CYCLE NAME **RODENTS**

__indicates flashing position.

NOTE: Operator may exit Change Values Mode at any time by pressing SAVE VALUES. Control will save confirmed values and return to selected cycle menu.

9. Enter new cycle name (9 characters or less), using **CURSOR** (left or right) touch pad to move from one position to the next, and **VALUE** (up or down) touch pad to scroll letters, numbers, underscore, spaces (represented by a square), and various other symbols.

To scroll rapidly through letters, numbers, etc., press and hold **VALUE** (up or down) touch pad. When display shows selected value, move cursor to next position.

10. Press **CHANGE VALUES** touch pad to confirm name and continue sequence. Display shows:

CYCLE IS AUTHORIZED? **YES**

__indicates flashing position.

*NOTE: At this point, supervisor or operator may decide to lock out a cycle. If **YES** is selected, all operators will be able to start the cycle. If **NO** is selected, cycle will be locked out and cannot be started.*

11. Press **VALUE** (up or down) touch pad to change YES to NO. Press **CHANGE VALUES** touch pad to confirm selection.

The PRE-WASH display screen does not appear because PRE-WASH values are not adjustable and cannot be bypassed. Control automatically moves to WASH 1. Display shows:

WASH 1 **MM:SS**

__indicates flashing position.

12. To enter WASH 1 treatment time, press **CURSOR** (left or right) touch pad to select position and **VALUE** (up or down) touch pad to select desired number (0-9). Treatment time is input in minutes and seconds within a range of 0 to 10 minutes.

13. Press **CHANGE VALUES** touch pad to confirm time entry.

NOTE: WASH 1 sequence continues only if time selected is different from 0.

14. Default WASH tank names are: Tank 1- ALKALINE, Tank 3 - ACID (option). Press **VALUE** (up or down) touch pad to change from ALKALINE to ACID.

NOTE: Tank 2 is always dedicated to PRE-WASH, RINSE, and FINAL RINSE.

If unit is equipped with a second wash tank (Tank 3), the WASH 1 Tank name screen will appear to allow operator to determine chemical name. Display shows:

WASH 1 USES
ALKALINE

__indicates flashing position.

NOTE: If unit is not equipped with an Additional Wash Tank (Tank 3), control will move on to the WASH 1 chemical rate message.

15. Press **VALUE** (up or down) touch pad to select detergent type (ALKALINE or ACID).

16. Press **CHANGE VALUES** touch pad to confirm selection. The WASH 1 chemical rate screen appears. Display shows, for example:

SET ALKALINE RATE
1 OZ/GAL

__indicates flashing position.

17. Press **VALUE** (up or down) touch pad to select chemical rate.

Chemical rate is input in oz/gal or in mL/L, according to Service Mode setting (see Section 4 of Maintenance Manual [P764330-842]), within a range of 0 to 4 oz/gal (0-32mL/L) in 1/8 oz (2 mL) increments.

18. Press **CHANGE VALUES** touch pad to confirm chemical rate. The WASH 1 temperature value screen appears. Display shows:

WASH 1
130 F

__indicates flashing position.

19. Press **VALUE** (up or down) touch pad to select temperature. Treatment temperature is in Fahrenheit or in Celsius, according to Service Mode setting (see Section 4 of *Maintenance Manual* [P764330-842]), within a range of 120 to 165°F (49 to 74°C).

20. Press **CHANGE VALUES** touch pad to confirm temperature selection. The MIDRINSE treatment screen appears. Display shows:

PERFORM MIDRINSE?
NO

__indicates flashing position.

21. Press **VALUE** (up or down) touch pad to select between YES or NO.

NOTE: MIDRINSE is non-recirculated and time setting is not adjustable.

22. Press **CHANGE VALUE** touch pad to confirm selection. The WASH 2 time value screen appears. Display shows:

WASH 2
00:00

__indicates flashing position.

23. To enter WASH 2 treatment time, press **CURSOR** (left or right) touch pad and **VALUE** (up or down) touch pad. Treatment time is input in minutes and seconds within a range of 0 to 10 minutes.

24. Press **CHANGE VALUES** touch pad to confirm selection.

NOTE: WASH 2 sequence continues only if time selected is different from 0.

25. If unit is equipped with an Additional Wash Tank, the WASH 2 tank name screen appears. Display shows:

WASH 2 USES
ACID

__indicates flashing position.

NOTE: If unit is not equipped with an Additional Wash Tank, control will move on to the WASH 2 chemical rate message.

26. Press **VALUE** (up or down) touch pad to change ACID to ALKALINE. Press **CHANGE VALUES** touch pad to confirm selection. The WASH 2 chemical rate value screen appears. Display shows, for example:

SET ACID RATE
0 OZ/GAL

__indicates flashing position.

27. Press **VALUE** (up or down) touch pad to select chemical rate. Chemical rate is input in oz/gal or in mL/L, according to Service Mode setting (see Section 4 of *Maintenance Manual* [P764330-842]), within a range of 0 to 4 oz/gal (0-32mL/L) in 1/8 oz (2 mL) increments.

28. Press **CHANGE VALUES** touch pad to confirm chemical entry. The WASH 2 temperature value screen appears. Display shows:

WASH 2
160F

__indicates flashing position.

29. Press **VALUE** (up or down) touch pad to select WASH 2 temperature. Temperature is input in Fahrenheit or in Celsius, according to Service Mode setting (see Section 4 of *Maintenance Manual* [P764330-842]), within a range of 120 to 165°F (49 to 74°C).

30. Press **CHANGE VALUES** touch pad to confirm temperature selection. The RINSE screen appears. Display shows:

PERFORM RINSE?
NO

__indicates flashing position.

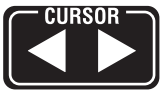
31. Press **VALUE** (up or down) touch pad to select between YES or NO.

NOTE: RINSE is non-recirculated and time setting is not adjustable.

32. Press **CHANGE VALUES** touch pad to confirm YES or NO. The FINAL RINSE time value screen appears. Display shows:

FINAL RINSE
03:00

__indicates flashing position.

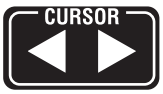


33. To enter Final Rinse treatment time, press **CURSOR** (left or right) touch pad and **VALUE** (up or down) touch pad. Treatment time is input in minutes and seconds within a range of 0 to 8 minutes.

34. Press **CHANGE VALUES** touch pad to confirm time selection. Final Rinse temperature can only be adjusted in Service Mode. The VAPOR EXHAUST time value screen appears. Display shows:

EXHAUST
01:00

__indicates flashing position.



35. To enter VAPOR EXHAUST treatment time, press **CURSOR** (left or right) touch pad and **VALUE** (up or down) touch pad . Treatment time is input in minutes and seconds within a range of 1 to 5 minutes.

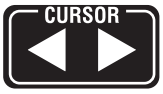
NOTE: VAPOR EXHAUST treatment cannot be bypassed.

36. Press **CHANGE VALUES** touch pad to confirm time entry.

37. If unit is equipped with the Drying option, the DRYING time value screen appears. Display shows:

DRYING
15:00

__indicates flashing position.



To enter DRYING treatment time, press **CURSOR** (left or right) touch pad and **VALUE** (up or down) touch pad. Treatment time is input in minutes and seconds within a range of 0 to 15 minutes.

38. Press **CHANGE VALUES** touch pad to confirm entry. Drying sequence continues only if time selected is different from 0. The Drying temperature screen appears. Display shows:

DRYING
180F

__indicates flashing position.

39. To enter DRYING treatment temperature, press **VALUE** (up or down) touch pad to select temperature. Treatment temperature is input in Fahrenheit or in Celsius, according to Service Mode setting (see Section 4 of Maintenance Manual [P764330-842]), within a range of 140 to 180°F (60-82.2°C).

40. Press **CHANGE VALUES** touch pad to confirm temperature selection.

41. The REFRESH RATE feature allows operator to refresh chemical solutions with fresh water after each cycle. REFRESH RATE is adjustable within a range of 15 to 100%. If the REFRESH RATE is set at 100%, the chemical tank will be completely drained and filled with fresh water.

    The ALKALINE tank REFRESH RATE screen appears. Display shows:

ALKALINE REFRESH
15%

__indicates flashing position.

To enter the ALKALINE tank REFRESH RATE, press **VALUE** (up or down) touch pad to select percentage. REFRESH RATE can be adjusted within a range of 15 to 100%.

42. Press **CHANGE VALUES** touch pad to confirm REFRESH RATE selection.

    If unit is equipped with a second chemical tank, display shows:

ACID REFRESH
15%

__indicates flashing position.

43 To enter the ACID Tank REFRESH RATE value, press **VALUE** (up or down) to select percentage. REFRESH RATE can be adjusted within a range of 15 to 100%.

44. Press **CHANGE VALUES** touch pad to confirm REFRESH RATE.

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.

45. **If unit is equipped with Automatic Floor Tilting option**, the load AUTOMATIC FLOOR TILTING screen appears. Display shows:

LOAD FLOOR TILT ?
NO

__indicates flashing position.

IMPORTANT: This screen is to activate or deactivate automatic floor tilting for the load chamber only.

Press **VALUE** (up or down) touch pad to change YES to NO. Press **CHANGE VALUES** touch pad to confirm selection.

46. The load MANIFOLD COUPLING screen appears. Display shows:

LOAD MANIFOLD ?
NO

__indicates flashing position.

NOTE: The load MANIFOLD COUPLING display is not shown if load AUTOMATIC FLOOR TILTING option is activated.

IMPORTANT: This screen is to activate or deactivate manifold coupling for the load chamber only.

Press **VALUE** (up or down) touch pad to change YES to NO. Press **CHANGE VALUES** touch pad to confirm selection.

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.

47. **If unit is equipped with Automatic Floor Tilting option**, the unload AUTOMATIC FLOOR TILTING screen appears. Display shows:

UNLOAD FLOOR TILT ?
NO

__indicates flashing position.

IMPORTANT: This screen is to activate or deactivate automatic floor tilting for the unload chamber only.

Press **VALUE** (up or down) touch pad to change YES to NO. Press **CHANGE VALUES** touch pad to confirm selection.

48. The unload MANIFOLD COUPLING screen appears. Display shows:

UNLOAD MANIFOLD ?
NO

__indicates flashing position.

NOTE: The unload MANIFOLD COUPLING display is not shown if unload AUTOMATIC FLOOR TILTING option is activated.

IMPORTANT: This screen is to activate or deactivate manifold coupling for the unload chamber only.

Press **VALUE** (up or down) touch pad to change YES to NO. Press **CHANGE VALUES** touch pad to confirm selection. Display shows, for example:

DATE	YY/MM/DD

__indicates flashing position.

49. To modify date, press **VALUE** (up or down) touch pad to change numbers. Press **CHANGE VALUES** touch pad to confirm selection. Display shows, for example:

TIME	**HH:MM:SS**

__indicates flashing position.

50. To modify time, press **VALUE** (up or down) touch pad to change numbers. Press **CHANGE VALUES** touch pad to confirm selection. Display shows:

SAVING VALUES...

The Change Values Mode sequence is completed. Display returns to first Cycle Menu. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ indicates flashing position.

5.3 Review Cycle Values

The Review Mode allows the operator to view the current settings of each programmable treatment value for the specific cycle selected. When a cycle is not in progress, each cycle program may be reviewed by accessing the Review Mode.

NOTE: The Review Cycle sequence can be aborted at any point by pressing STOP/RESET touch pad.

1. Press **CYCLE MENU** touch pad until desired cycle menu appears on the screen. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___indicates flashing position.

2. Press **SELECT CYCLE** touch pad until desired cycle name flashes. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___indicates flashing position.

3. Press **REVIEW CYCLE** touch pad, display shows:

CYCLE AUTHORIZED
YES

4. Press **REVIEW CYCLE** touch pad to access the Review Mode, and view the first treatment value programmed for the selected cycle.

5. Continue to press **REVIEW CYCLE** touch pad again to sequentially view each treatment value programmed for the selected cycle. Displays for each treatment value programmed will appear one after the other.

6. When all the cycle values have been reviewed, press **STOP/RESET** touch pad to exit Review Mode. Display will return to selected Cycle Menu. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

___ indicates flashing position.

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- **Regularly scheduled preventive maintenance, in addition to the faithful performance of the minor maintenance described within this manual, is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.**
- **Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS regarding service options.**

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

Maintenance procedures described in this section should be performed regularly at the intervals indicated. The indicated frequencies are minimums and should be increased if washer usage warrants. If a problem occurs, refer to Section 7, *Troubleshooting*. A sample maintenance record is included in this Section, **Table 6-1**, which should be used as a guide for the frequency of maintenance. Such a record will prove useful in assuring proper maintenance. Refer to the Maintenance Manual (P764330-842) for replacement parts list.

6.1 Preventive Maintenance Schedule

The following guide should be followed to properly maintain the washer. Contact STERIS when service is required.

Table 6-1. Basil® 9502 Washer Preventive Maintenance Schedule

	SERVICE PERFORMED:	Min. Frequency
1.0	**PREPARATION FOR PREVENTIVE MAINTENANCE**	
1.1	Discuss equipment operation with department personnel.	6 x per year
1.2	Inspect printouts for signs of trouble.	6 x per year
1.3	Before servicing equipment, shut off all building services and drain all lines. Use Lockout-Tagout practices when servicing equipment. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.	6 x per year

Table 6-1. Preventive Maintenance Schedule (continued)

	SERVICE PERFORMED:	Min. Frequency
2.0	**STAGE IV CONTROL**	
2.1	Verify that paper take-up is working properly.	6 x per year
2.2	Check printout for darkness, missing dots, etc.	6 x per year
3.0	**DOOR ASSEMBLY (EACH DOOR)**	
3.1	Inspect doors for ease of operation.	6 x per year
4.0	**CHAMBER COMPONENTS**	
4.1	Clean debris screen in bottom of wash chamber.	Once a day
4.2	Inspect vertical spray headers for clogged holes. Clean them if necessary.	Once a week
4.3	Remove hard water deposits from interior of chamber (use Descaler cycle).	Once a week
4.4	Through the window, inspect vertical spray header assembly for free movement, while washer is operating.	6 x per year
4.5	Check sump under floor sections for debris. Use a hose to clean if necessary.	6 x per year
4.6	Check interior light.	6 x per year
4.7	Clean debris from bottom door guide. Use a hose to clean if necessary.	6 x per year
5.0	**CHEMICAL INJECTION PUMP**	
5.1	Lubricate chemical injection pump rollers.	12 x per year
6.0	**SAFETY FEATURES**	
6.1	Test EMERGENCY STOP Cables for proper operation.	6 x per year
6.2	Check warning stickers inside wash chamber for legibility. If stickers are worn out and no longer legible, replace with new ones.	6 x per year
6.3	Test EMERGENCY STOP pushbuttons for proper operation.	6 x per year
6.4	Test LOCK/UNLOCK/INITIALIZATION switch for proper operation.	6 x per year
7.0	**FINAL TEST**	
7.1	Check work area to ensure removal of all materials used during inspection.	Every Inspection
7.2	Unlock electrical disconnect switch, position to ON and turn all utilities back ON.	Every Inspection

6.2 Cleaning Procedures

6.2.1 Daily Cleaning

NOTE: Always clean unit from load side.

1. After last cycle of the day, allow unit to cool down.

2. On load side of washer, turn LOCK/UNLOCK/INIT key selector to LOCK position. Remove the key from the selector and keep on yourself. Red indicator light above control panel starts flashing. Display shows:

WASHER LOCK

... and printer prints:

```
--------------------------------------------------
WASHER LOCK
HH:MM:SS                          YY/MM/DD
--------------------------------------------------
```

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Before servicing or cleaning exterior of unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to de-energize unit. Keep the key on yourself.

⚠ CAUTION – POSSIBLE EQUIPMENT DAMAGE: Use non-abrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies can be harmful to stainless steel. Do not use these cleaners on painted surfaces.

3. Using a damp cloth, clean door panels, door windows and exterior of unit.

4. Using the key, turn LOCK/UNLOCK/INIT to UNLOCK position. Remove the key from selector and keep on yourself. Red indicator light above control panel stops flashing and display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ indicates flashing position.

5. When indicator light above control panel turns green, press **DOOR OPEN** touch pad to open load side doors.

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- **Before servicing or cleaning exterior of unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to de-energize unit. Keep the key on yourself.**
- **Always wear appropriate personal protective equipment (PPE), when cleaning or removing debris from bottom of wash chamber and over suction plate.**

WARNING – PERSONAL INJURY HAZARD: Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in bottom of wash chamber.

6. On load side of washer, turn LOCK/UNLOCK/INIT key selector to LOCK position. Red indicator light above control panel starts flashing and display shows:
7. Remove the key from the selector and keep on yourself.
8. Wearing appropriate Personal Protective Equipment (PPE), enter wash chamber.
9. Remove floor gratings.
10. Remove debris from bottom of each sumps and over each suction plates.

NOTE: Always clean sump and suction plate while they are still wet, before debris dries.

11. Replace floor gratings on the bottom of the wash chamber.

12. Using the key, turn LOCK/UNLOCK/INIT to UNLOCK position. Red indicator light above control panel stops flashing then turns green. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ *indicates flashing position.*

6.2.2 Weekly Cleaning

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Before servicing or cleaning the unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to de-energize unit. Keep the key on yourself.

WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

CAUTION – POSSIBLE EQUIPMENT DAMAGE: Use non-abrasive cleaners when cleaning unit. Follow directions on containers and rub in a back-and-forth motion, in same direction as surface grain. Abrasive cleaners will damage stainless steel. Cleaners rubbed in a circular motion or applied with a wire brush or steel wool on door and chamber assemblies can be harmful to stainless steel. Do not use these cleaners on painted surfaces.

1. After last cycle of the day, allow unit to cool down.
2. On load side of washer, turn LOCK/UNLOCK/INIT key selector to LOCK position. Remove the key from the selector and keep on yourself. Red light starts flashing. Display shows:

WASHER LOCK

... and printer prints:

```
-----------------------------------------------------
WASHER LOCK
HH:MM:SS                          YY/MM/DD
-----------------------------------------------------
```

3. Clean washer exterior and door panels as outlined below. Using Amscrub™ Multipurpose Cleaner (NM400)* for general stains, Pry® Stain Remover Cream (NM430)*, and Stainless-Steel Cleaner to keep equipment looking like new.
4. Using a damp cloth or sponge, apply cleaner in a back-and-forth motion, rubbing in same direction as surface grain.
5. Thoroughly wipe off cleaner.
6. Polish surface with a clean, dry, lint-free cloth.
7. Clean door windows, with a general window cleaning product.
8. Dry window with a lint-free cloth.
9. Using the key, turn LOCK/UNLOCK/INIT to UNLOCK position. Remove the key from selector and keep on yourself. Red light stops flashing and display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ indicates flashing position.

10. When indicator light turns green, press **DOOR OPEN** touch pad to open load side doors.

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

- **Before servicing or cleaning exterior of unit, always turn LOCK/UNLOCK/INIT key selector to LOCK position to de-energize unit. Keep the key on yourself.**
- **Always wear appropriate personal protective equipment (PPE), when cleaning or removing debris from bottom of wash chamber and over suction plate.**

WARNING – PERSONAL INJURY HAZARD: Never perform cleaning of wash chamber until full cycle has been completed. If cycle has not been completed, contaminated debris or water may remain in bottom of wash chamber.

WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

11. On load side of washer, turn LOCK/UNLOCK/INIT key selector to LOCK position. Remove the key from the selector and keep on yourself. Red indicator light above control panel starts flashing. Display shows:

WASHER LOCK

... and printer prints:

```
-------------------------------------------------------
WASHER LOCK
HH:MM:SS                              YY/MM/DD
-------------------------------------------------------
```

12. Wearing appropriate Personal Protective Equipment (PPE), enter wash chamber.
13. Remove all floor gratings.
14. Remove debris from bottom of each sump and each suction plate.
15. Wash chamber interior with a moderately alkaline solution adding tap water.
16. Rinse with tap water and dry with a lint-free cloth.
17. Reinstall floor gratings.

18. Using the key, turn LOCK/UNLOCK/INIT to UNLOCK position. Remove the key from selector and keep on yourself. Red light stops flashing and display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ *indicates flashing position.*

DOOR CLOSE

19. When indicator light turns green, press **DOOR CLOSE** touch pad to close door.
20. Run a DRAIN cycle to remove soiled cleaning water from the wash chamber (see Section 4.6, *DRAIN Cycle*).

6.2.3 Horizontal Spray Headers and Spray Jets

WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

See Figure 6-1.

1. Remove end spray jets from each horizontal spray header, as indicated on Figure 6-1.
2. Use a fine wire (approximately the wire gauge of a paper clip) to clear sediment from all spray nozzles. Rinse under running water to clean out sediment.
3. Process a DRAIN Cycle including a Purge Travelers phase (see Section 4.6, *DRAIN Cycle*) with spray jets removed.
4. Reinstall end spray jets on each horizontal spray headers. Assure jets are reinstalled in proper horizontal position.
5. Remove end caps from horizontal spray headers to visually inspect for debris and sediments. Clean if necessary.
6. Reinstall end caps.

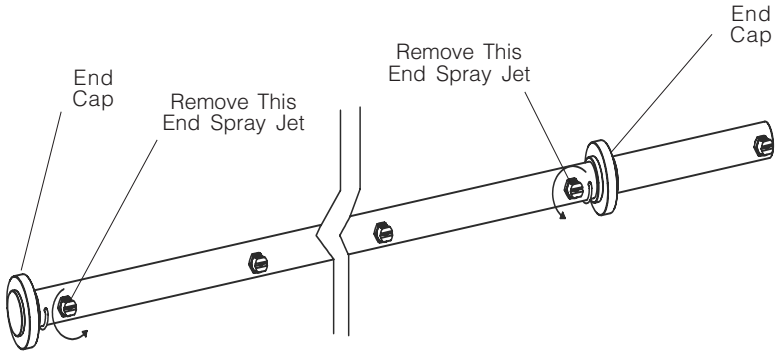


Figure 6-1. Spray Jets and End Caps

6.2.4 Central Header Manifold (Option)

WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

See Figures 6-2 and 6.3.

1. Remove Rotary Spray Holder and Rotary Spray Arms from Accessory.
2. Unscrew spray arms from Spray Arm Hub. Rinse Spray Arms under running water to clean out sediment.
3. Remove End Spray Jets from Spray Arms. Use a fine wire (approximately the wire gauge of a paper clip) to clean out sediment. Rinse under running water.
4. Reinstall spray jets on Rotary Spray Arms.
5. Place bushing on top of Rotary Spray Arm Hub and reinstall Rotary Spray Arm assembly to Centra Header Manifold.

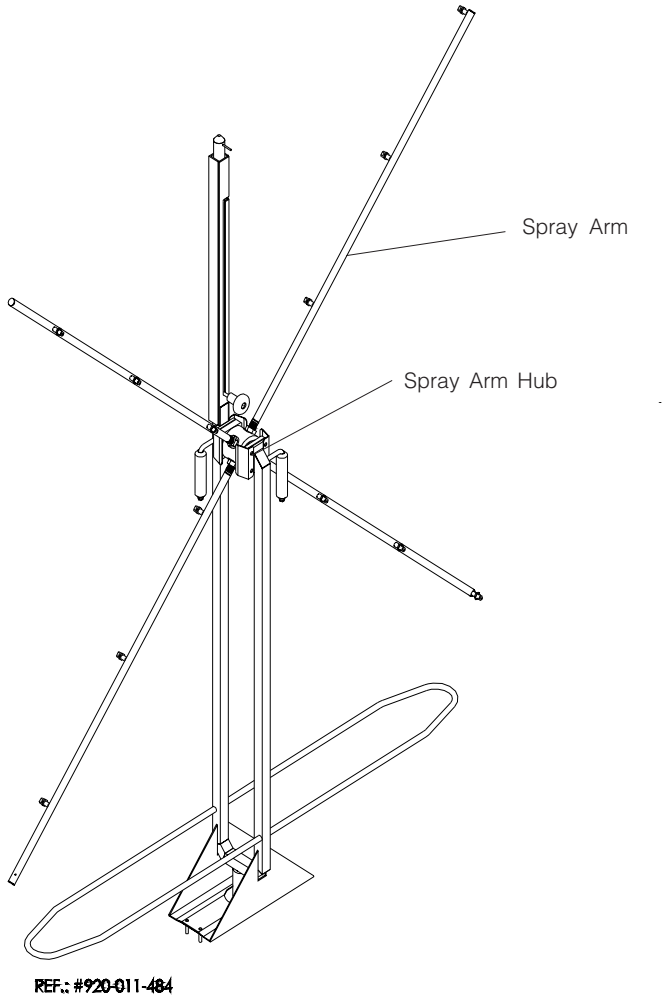


Figure 6-2. Central Header Manifold (Option)

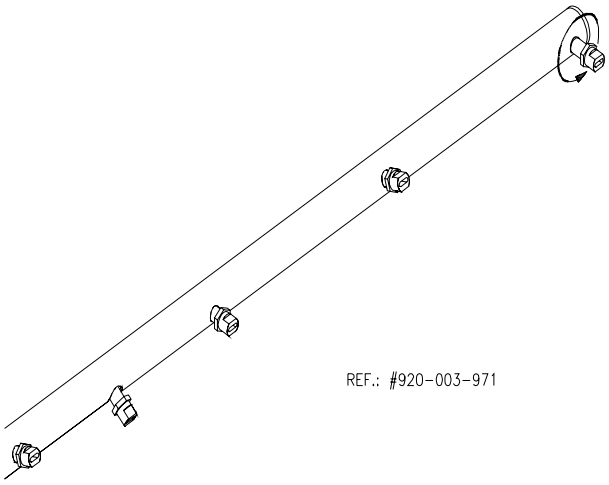


Figure 6-3. Spray Jets

6.2.5 Rotary Spray Arms on Bottle Washing Cart (Option)

See Figure 6-4 and 6-5.

1. Remove Rotary Spray Arms from Bottle Washing Cart.
2. Loosen locknuts to free Rotary Spray Arms. Use a fine wire (approximately the wire gauge of a paper clip) to clean out sediment. Rinse under running water.

> ⚠ **WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.**

3. Clean bushing and rinse under running water.
4. Reinstall Rotary Spray Arms on the spray header adaptor and tighten locknuts.

NOTE: To ease assembly, the spray header hub and the bushings can only be installed in one position on the spray header adaptor. Align slot from spray arm to hole on hub.

5. Reinstall Rotary Spray Arm assembly on Bottle Washing Cart.

6.2.6 Building Supply Line Strainers

1. Close building supply lines: hot water, cold water, steam, and air.
2. Remove and clean strainers.
3. Reinstall strainers.
4. Open building supply lines.

Figure 6-4. Bottle Washing Cart (Option)

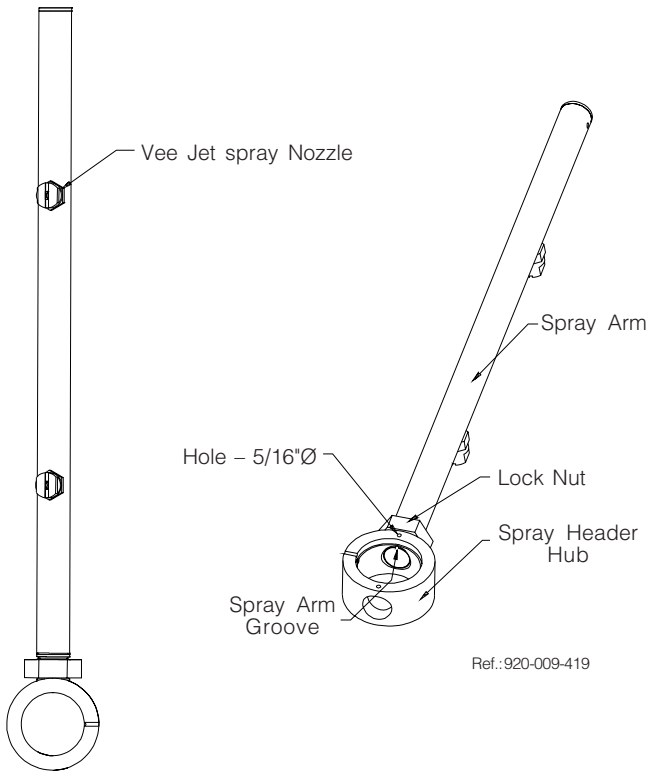


Figure 6-5. Bottle Washing Cart Spray Arms

6.2.7 Vertical Self-Cleaning Filters

See Figure 6-6.

IMPORTANT: Intake filter requires periodic inspection and replacement. Initial inspection is suggested once a week, then the user should determine the frequency thereafter.

⚠ WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

Remove and clean screen of self-cleaning filter cartridge located on mechanical core as follows:

1. Loosen quick-disconnect clamps on valve. Push Tank 1 recirculation ball valve against Tank 1 (see Figure 6-6, Detail A).

NOTE: Do not place recirculation valve back into its original position. This will ease cleaning of filter.

2. Loosen quick disconnect clamps on self-cleaning filter and piping. Turn Return Outlet Piping to the left (see Figure 6-6, Detail B).
3. Lift out self-cleaning filter cartridge. Remove debris by scraping exterior surface filter.
4. Rinse filter under running water.
5. Reinsert filter.
6. Move filter piping back into position. Tighten quick-disconnect clamps.
7. Run a cycle to verify for leaks.

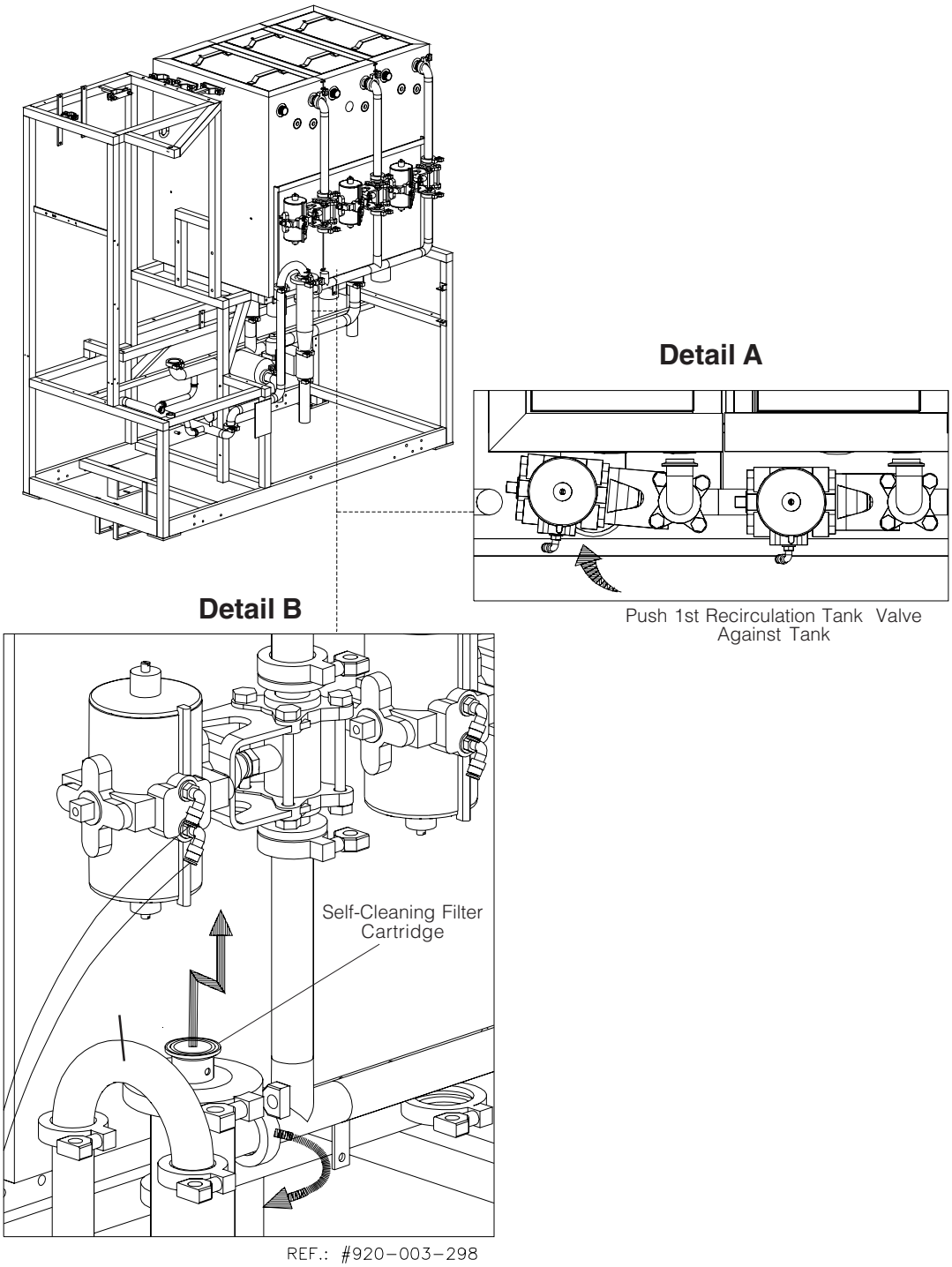


Figure 6-6. Vertical Self-cleaning Filter

6.3 DESCALER Cycle

Remove hard water deposits from wash chamber and accessories as follows using the DESCALER Cycle.

NOTE: Depending on hardness of water being used, it may be necessary to remove hard water deposits more often. Remove deposits from wash chamber and accessories whenever deposits become visible.

6.3.1 Manual DESCALER Cycle

⚠ CAUTION– POSSIBLE EQUIPMENT DAMAGE: Do not process load using Central Header Manifold or Bottle Washing Cart in a chamber where Automatic Floor Tilting option is activated. If Automatic Floor Tilting is used, manifolded water inlet and washer will be damaged.

NOTE: When processing a DESCALER Cycle, note the following:

1) Manual DESCALER cycle has a duration of one hour.

2) If unit has been configured with Central Spray Header Manifold or Bottle Washing Cart options, accessory must be used to perform DESCALER Cycle.

1. **If Central Header Manifold or Bottle Washing Cart is present**, roll Central Spray Manifold or Bottle Washing Cart into wash chamber.
2. Connect manifold coupling system (option) to accessory (see Section 4.4, *Accessories*).

3. Press **CYCLE MENU** touch pad to access third Factory-Set cycle menu. Display shows:

CYCLE 9	**CYCLE 10**
DRAIN	**DESCALER**

___ *indicates flashing position*

4. Press **SELECT CYCLE** touch pad to select DESCALER (flashing). Press **CYCLE START** touch pad to confirm selection and start DESCALER Cycle. Display shows:

DESCALER	**ALKALINE**
DRAINING	**MM:SS**

... alternating with:

DESCALER	**RINSE**
COOLDOWN	

... then:

DESCALER	**RINSE**
DRAINING	

... then:

DESCALER	**ACID**
DRAINING	

5. All tanks drain completely to assure only clean water is used.

6. When all tanks are completely drained, tanks start filling with clean water. Display shows:

DESCALER FILLING	**ALKALINE MM:SS**

... then:

DESCALER FILLING	**RINSE**

... then:

DESCALER FILLING	**ACID**

7. When all tanks are filled with clean water, cycle stops and display shows:

ADD DESCALER IN BOTH CHAMBERS-PRESS START

8. On load side, press **DOOR OPEN** touch pad to open load door.

> ⚠ **WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD: Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.**

9. Pour 76 oz (2.25 L) of Liquid Descaler Liquid Scale Remover into load chamber sump.

10. Press **DOOR CLOSE** touch pad to close load door.

11. On unload side press **DOOR OPEN** touch pad to open unload door.

12. Pour 76 oz (2.25 L) of Liquid Descaler Liquid Scale Remover into unload chamber sump.

13. Press **DOOR CLOSE** touch pad to close unload door.

14. Press **CYCLE START** touch pad to run DESCALER cycle. Water from sumps will be sent to Alkaline Tanks to initiate descaling. Display shows:

DESCALER PRIMING	**ALKALINE**

15. While DESCALER cycle is in progress. Display shows:

DESCALER	**ALKALINE**
DESCALING	

... alternating with:

DESCALER	**ALKALINE**
SET POINT	**XXX.XF**

... and:

DESCALER	**ALKALINE**
XXX.X F	**XXX.XF**

... then:

DESCALER	**ALKALINE**
DRAINING	

WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD: Wear appropriate personal protective equipment (PPE) when using a descaling product. Avoid contact with eyes or skin. If spilled or splashed, flush with water for 15 minutes. If swallowed, DO NOT induce vomiting. Administer an alkali with plenty of water. Seek medical attention immediately.

16. Procedure of **Steps 8 to 15** must be repeated for Rinse and Acid tanks. Liquid Descaler Liquid Scale Remover must be added manually into sumps each time display shows:

ADD DESCALER IN BOTH CHAMBERS-PRESS START

17. Once the descaling of all tanks is completed, the washer proceeds to rinse all tanks. Display shows:

DESCALER	**ALKALINE**
RINSING	

... alternating with:

DESCALER	**ALKALINE**
SETPOINT	**XXX.XF**

...and:

DESCALER	**ALKALINE**
XXX.X F	**XXX.X F**

...then:

DESCALER	**ALKALINE**
DRAINING	

18. The same sequence will be repeated for Rinse and Acid tanks.
19. Once Rinse phase is completed in all tanks, a Vapor Removal phase starts. Display shows:

DESCALER	**EXHAUST**
VAPOR REM	**XX:XX**

20. When indicator light turns green, press **DOOR OPEN** touch pad on load side, to open door and allow wash chamber to cool down.
21 Check Suction Plates in bottom of sump for debris. Clean Suction Plates if necessary.

6.3.2 Automatic DESCALER Cycle (Option)

If Automatic Descaler System option is present, an additional chemical pump and flowmeter allows operator to process a DESCALER cycle during which Liquid Descaler Liquid Scale Remover is automatically injected into load and unload chambers.

NOTE: When processing a DESCALER Cycle, note the following:

1) Automatic DESCALER Cycle has a duration of one hour.

2) If unit has been configured with Central Spray Header Manifold or Bottle Washing Cart options, you must use accessory to perform DESCALER Cycle.

⚠ CAUTION– POSSIBLE EQUIPMENT DAMAGE: Do not process load using Central Spray Header Manifold, Bottle Washing Cart, or Universal Cage and Pan Wash Cart in a chamber for which Floor Tilt option is activated. If Floor Tilt is used with these accessories, manifolded water inlet and washer will be damaged.

1. **If Central Header Manifold or Bottle Washing Cart is present**, roll Central Spray Header Manifold or Bottle Washing Cart into wash chamber.
2. Connect manifold coupling system (option) to accessory (see Section 4.4, *Accessories*).

3. Press **CYCLE MENU** touch pad to access third Factory-Set cycle menu. Display shows:

CYCLE 9	**CYCLE 10**
DRAIN	**DESCALER**

___ *indicates flashing position*

4. Press **SELECT CYCLE** touch pad to select DESCALER (flashing). Press **CYCLE START** touch pad to confirm selection and start DESCALER Cycle. Display shows:

Name of Cycle Started — **DESCALER** **ALKALINE** — *Treatment in Progress*
Phase in Progress — **DRAINING**

... then:

DESCALER	**RINSE**
DRAINING	

... then:

DESCALER	**RINSE**
COOLDOWN	

...then:

DESCALER	**ACID**
DRAINING	

5. All tanks will drain completely to assure only clean water is used.

6. When all tanks are completely drained, tanks start filling with clean water. Display shows:

DESCALER FILLING	**ALKALINE**

... then:

DESCALER FILLING	**RINSE**

…then:

DESCALER FILLING	**ACID**

7. When all tanks are filled with clean water, display shows:

DESCALER PRIMING	**ALKALINE**

8. When sump is filled with water, Descaler injection starts. Display shows:

Detergent Injection Phase —

DESCALER INJECTING	**ALKALINE**

9. While cycle is in progress, display shows:

DESCALER DESCALING	**ALKALINE MM:SS**	— *Phase Countdown Starts Only when Temperature Setpoint is Reached*

... alternating with:

DESCALER SETPOINT	**ALKALINE XXX.XF**

... and:

Current Temperature in Load Chamber —

DESCALER XXX.X F	**ALKALINE XXX.X F**	— *Current Temperature in Unload Chamber*

... then:

DESCALER DRAINING	**ALKALINE**

10. Sequence from **Steps 7 to 9** will be repeated for Rinse and Acid tanks.
11. Once the descaling of all tanks is completed, the unit proceeds to rinse all tanks. Display shows:

DESCALER RINSING	**ALKALINE**

... alternating with:

DESCALER SET POINT	**ALKALINE XXX.XF**

... and:

DESCALER	**ALKALINE**
XXX.X F	**XXX.X F**

... then:

DESCALER	**ALKALINE**
DRAINING	

12. The same procedure will be repeated for Rinse and Acid tanks.
13. Once Rinse phase is completed in all tanks, a Vapor Removal phase starts. Display shows:

DESCALER	**EXHAUST**
VAPOR REM	**MM:SS**

14. When indicator light on load side turns green, press **DOOR OPEN** touch pad to open door and allow wash chamber to cool down.
15. Check suction plate in bottom of sump for debris. Clean suction plate if necessary.

WARNING–SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

6.4 Chemical Container Replacement

WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD:

- **Always use non-foaming chemical for effective cleaning and proper pump and water level control operation. Follow manufacturer's recommendations for amount of chemical to be used.**
- **Detergents are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow. Read and follow the precautions and instructions on the detergent label and in the Material Safety Data Sheet (MSDS) prior to handling detergent containers, or servicing the detergent injection pumps and lines. Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing chemical injection pumps and lines.**

CAUTION – POSSIBLE EQUIPMENT DAMAGE: When choosing a chemical, select one with a low chloride content. Chloride is harmful to stainless steel and will deteriorate washer.

See Figure 6-7.

To achieve maximum cleaning efficiency, select a chemical appropriate to soil type being processed. See Section 2.3, *Chemical Additive Specifications*, and always follow chemical manufacturer's recommendations for amount of chemical to be used.

NOTE: Always use a non-foaming chemical for effective cleaning and proper pump operation.

When chemical is low or has run out:

1. Remove pickup tube and level sensor assembly from empty container and remove container.
2. Install a new container.
3. Insert pickup tube and level sensor vertically into new container.

NOTE: System is self-priming, therefore no other operation is necessary.

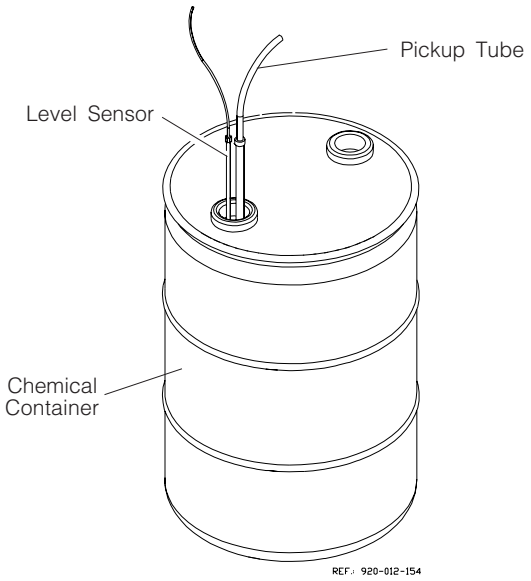


Figure 6-7. Chemical Container

6.5 Injection Pumps Lubrication and Squeeze Tube Replacement

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS regarding service options.

WARNING – CHEMICAL BURN AND/OR EYE INJURY HAZARD: Detergents are caustic and can cause adverse effects to exposed tissues. Do not get in eyes, on skin or attempt to swallow. Read and follow the precautions and instructions on the detergent label and in the Material Safety Data Sheet (MSDS) prior to handling detergent containers, or servicing the detergent injection pumps and lines. Wear appropriate personal protective equipment (PPE) whenever handling chemicals or servicing chemical

CAUTION – POSSIBLE EQUIPMENT DAMAGE Always use a silicone lubricant to lubricate squeeze tubes. Petroleum-based lubricants, such as Vaseline or grease, will cause squeeze tubes to melt.

1. Each month, have a qualified service technician lubricate section(s) of squeeze tube in contact with pump(s), using Silicone Lubricant (P117950-599).
2. Each month, check squeeze tube(s) for any leaks or signs of wear. If necessary, replace tube as follows:
   a. If unit is on, position POWER-OFF/STANDBY switch to OFF/STANDBY position.
   b. On load side of washer, turn LOCK/UNLOCK/INIT key selector to LOCK position. Remove the key from the selector and keep on yourself. Red indicator light above control panel starts flashing. Display shows:

WASHER LOCK

... and printer prints:

```
----------------------------------------------------
WASHER LOCK
HH:MM:SS                          YY/MM/DD
----------------------------------------------------
```

   c. The injection pumps are located on the mechanical core. Remove clamps and disconnect the squeeze tube ends from the pickup tube and feed lines.
   d. Remove screws attaching injection pump faceplate to injection pump head. Lift faceplate away from pump head.
   e. To remove squeeze tube from pump head, pull out tube by one end. Discard the tube.
   f. Clean all pump surfaces.
   g. Insert one end of new tube into pump head and rotate roller block manually.
   h. Liberally spread Silicone Lubricant (P117950-599) over rollers in the roller block and all tubing surfaces in contact with the pump head.
   i. Return faceplate to pump head and fasten with screws previously removed.
   j. Connect ends of tube to pickup tube and feed lines. Attach clamps to both lines.
   k. Using the key, turn LOCK/UNLOCK/INIT to UNLOCK position.
   l. Position POWER-OFF/STANDBY switch to POWER position. Red indicator light above control panel stops flashing. Display shows:

RODENTS	**BOTTLES**
RABBITS	**PRIMATES**

__ indicates flashing position.

   m. Initiate a cycle (see Section 4.2, *Priming Procedure*, and Section 4.5, *Typical Cycle Operation*) to verify squeeze tube operation.

6.6 Printer Paper Roll Replacement

6.6.1 Procedure

See Figures 6-8 to 6-12.

NOTE: Do not operate printer without paper.

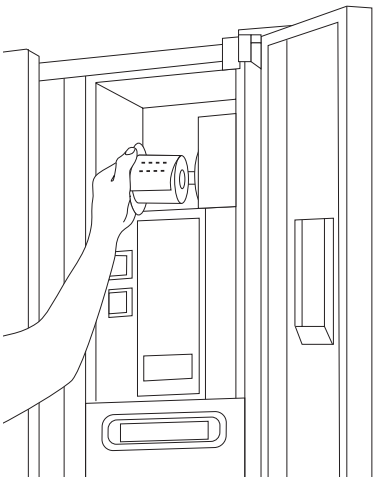


Figure 6-8. Remove Take-up Spindle

1. Open printer door.
2. Grasp remaining paper and pull it upward and out of printer.
3. Remove take-up spindle from its drive mechanism by pulling it to the left (see Figure 6-8).
4. Remove paper roll from take-up spindle and set empty take-up spindle aside.
5. Lower the platen and remove the lower paper spindle by pulling it straight forward.
6. Place new paper roll onto the lower spindle with the paper feeding downward from the back of the paper roll (see Figure 6-9).

NOTE: Check that the paper roll is positioned correctly. Thermal printer will not print if the paper roll is inserted backwards. Do not use other brands of thermal paper, use only STERIS thermal paper (Part Number 129359-008). Damage to printer mechanisms can occur if paper of different width or thickness is used.

7. Place lower spindle (with new paper roll) back into position by pressing from the front until it snaps into place.
8. Pull four or five inches of paper out from roll and tear the corners off the end to form a "V" tab (see Figure 6-9).
9. Slide tab of paper roll into printer from the back (with platen still in down position) until it exits from front of printer.
10. Grasp tab of paper, pull up 10 to 12 inches of paper, and feed this paper through opening in platen (see Figure 6-10).
11. Raise platen back up into position and snap in place under catch.
12. Insert tab of new paper roll into slot of take-up spindle (see Figure 6-10) and rotate spindle to secure paper in slot (see Figure 6-11).
13. Press take-up spindle back onto the drive mechanism and allow motor to rotate spindle to verify paper is secured to take-up roll (see Figure 6-12).
14. Close printer door.

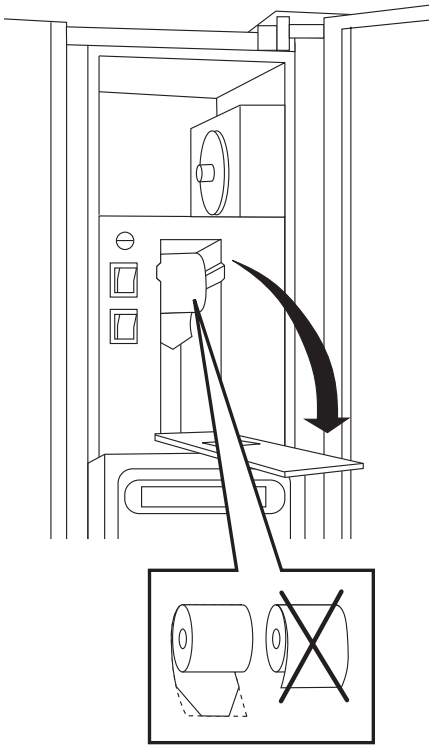


Figure 6-9. Install Paper Roll

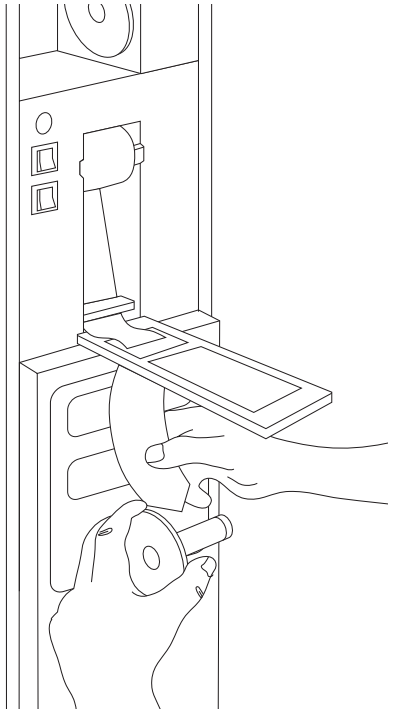


Figure 6-10. Feed Paper Through Printer

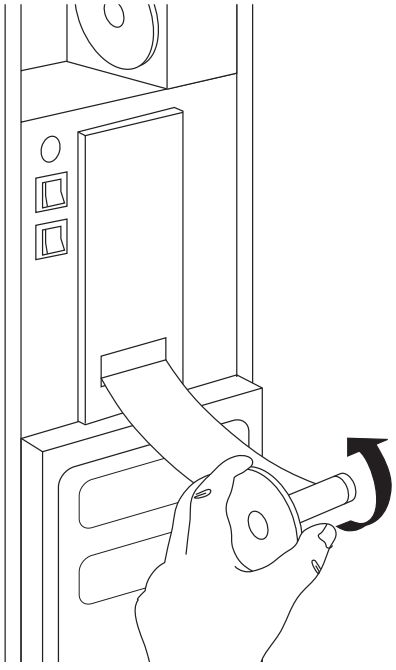


Figure 6-11. Rotate Take-Up Spindle

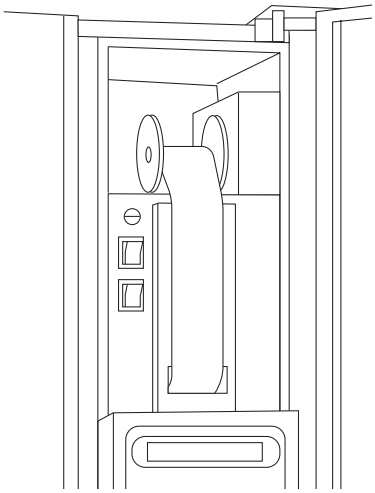


Figure 6-12. Verify Paper Installation

6.6.2 Thermal Paper Storage

Thermal paper is subject to fading with time, humidity, and exposure to light.

It is the manufacturer's recommendation that thermal paper be stored in a dark place with an average ambient temperature of less than 77°F (25°C) and a relative humidity less than 65%. Under these conditions, the paper remains readable for at least five years. It is recommended that if printed data is to be retained for periods of time longer than 5 years (6-25 years), an additional photocopy should be made for record retention. In any case, a duplicate set of records should be maintained in the files of the engineering or maintenance departments.

Thermal paper begins to develop color at about 158°F (70°C). However, under humid conditions, it might begin to develop at an accelerated rate. If stored for 24 hours at 140°F (60°C), the paper shows some signs of development. It also shows signs of development if stored for 24 hours at 113°F (45°C) and a relative humidity of 90%.

Do not store thermal paper next to other chemically treated papers - such as pressure sensitive paper or other type of recording round charts - as this may cause fading in print. If thermal paper is to be stored in the same area, always ensure it and other chemically treated papers are kept in separate envelopes.

Thermal paper discolors when exposed to direct sunlight.

TROUBLESHOOTING

7

⚠ WARNING–PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs and adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS regarding service options.

⚠ WARNING - ELECTRICAL SHOCK AND/OR BURN HAZARD: Disconnect all utilities to washer before servicing. Do not service washer unless all utilities have been properly locked out. Always follow local occupational health and safety regulations, as well as electric and plumbing codes.

⚠ WARNING - SLIPPING HAZARD: To avoid slippery floor conditions, immediately wipe up any spilled liquids or condensation.

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

This section describes the types of washer malfunctions which may occur, and indicates probable causes and corrective actions.

If you are unable to correct the problem with use of the Troubleshooting Charts, or if a problem occurs that is not described on the charts, please call STERIS.

NOTE: Never permit unqualified persons to service the washer.

Table Descriptions

Table 7-1 – Problems where NO alarm screen and printout occur.

Table 7-2 – Problems where alarm screen and/or printout occur.

Table 7-1. Troubleshooting Chart - No Alarm Screen or Printout

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
1. Interior lights does not turn on.	1. POWER-OFF/STANDBY switch in OFF/STANDBY position – Position to POWER. 2. Unit is in Service Mode – Switch unit to Operating Mode by pressing EXTEND CYCLE touch pad. 3. Fuse is blown – Call STERIS.* 4. Defective relay – Call STERIS.* 5. Defective fluorescent or ballast – Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
2. Screen indicates "SERVICE TEST" when POWER-OFF/STANDBY switch is positioned to POWER.	1. Unit in Service Mode - Switch washer to Operating Mode by pressing EXTEND CYCLE touch pad. 2. If condition reoccurs, call STERIS.*
3. Printer does not operate (display is blank) when building electrical supply switch is ON.	1. Printer ribbon cable unplugged from printer PC board – Call Service. 2. Printer is defective – Call STERIS.* 3. Printer PC Board is defective – Call STERIS.*
4. Generated printout is light or blank or parts of characters are missing on generated printout.	1. Printer paper installed backwards – Reinstall paper roll with paper feeding downward from the back of the roll. 2. Incorrect printer paper used – Use recommended products; do not use other brands of thermal paper, use only STERIS thermal paper (Part number P129359-008). 3. Printer head is dirty – Call STERIS.* 4. Printer is defective – Call STERIS.* 5. Printer PC board is defective – Call STERIS.*
5. Normal display when POWER/OFF-STANDBY switch is turned on, but printer will not print.	1. Printer ribbon cable unplugged from printer PC board – Call Service. 2. Printer PC board defective – Call STERIS.* 3. Printer is defective – Call STERIS.*
6. Printer printout is erratic.	1. Printer PC board defective – Call STERIS.* 2. Printer is defective – Call STERIS.*
7. No sound acknowledgment (beep signal) when touch pads are pressed.	1. Touch panel unplugged – Call STERIS.* 2. Touch panel defective – Call STERIS.*
8. Display locked up; pressing STOP/RESET touch pad has no effect.	1. Push and pull EMERGENCY STOP pushbutton. 2. If condition reoccurs, call STERIS.*
9. Thornton 200 pH Controller does not operate (display is blank) when building electrical supply disconnect switch is ON.	Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
10. Control does not communicate with Thornton 200 pH Controller.	Call STERIS.*
11. Spray jets clogged.	1. Check and clean spray jets. 2. If condition reoccurs, call STERIS.*
12. Treatment stops for no apparent reason.	1. Chamber doors open – Close doors and press CYCLE/START touch pad. 2. If condition reoccurs, call STERIS.*
13. Pump does not start during a treatment.	1. Chamber doors open – Close doors and press CYCLE/START touch pad. 2. If condition reoccurs,call STERIS.*
14. Insufficient or no water entering chamber through spray system.	1. Horizontal spray headers clogged – Clean spray headers. 2. Chamber debris screen clogged – Clean debris screen. 3. Self-cleaning filter clogged – Clean filter. 4. If condition reoccurs, call STERIS.*
15. Insufficient or no water entering side tanks during treatment.	1. Supply valves not fully open – Open supply valves. 2. If condition reoccurs, call STERIS.*
16. Foam in chamber or inside tanks.	1. Wrong type of detergent. Refer to detergent specifications in Section 2.3, *Chemical Additives Specifications*, and follow manufacturer's recommendations for amount of detergent to be used. 2. Too much chemical is injected during treatment – Check chemical injection calibration in Service Mode – Call STERIS.*
17. Load comes out dirty.	1. Wrong type of detergent or inappropriate concentration – Refer to detergent specifications in Section 2.3, *Chemical Additives Specifications*, and follow manufacturer's recommendations for amount of detergent to be used. 2. Horizontal spray headers clogged – Clean spray headers. 3. If condition reoccurs, call STERIS.*
18. Detergent leaks from mechanical core.	Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
19. Water leaks from washer.	1. Piping is leaking – Call STERIS.* 2. Damaged gaskets on top or bottom of doors – Call STERIS.* 3. Door side gaskets badly adjusted – Call STERIS.*
20. Chamber does not drain as usual (normally, chamber/sump is empty).	1. Chamber debris screen clogged – Clean screen. 2. Self-cleaning filter clogged – Clean filter. 3. If condition reoccurs, call STERIS.*
21. Unload door fails to open.	Safety interlock feature engaged. Unload door will not open until cycle is completed.
22. Insufficient or no water entering chamber through central spray header manifold.	1. Bad connection between spray header and manifold – Install header correctly. 2. Clogged spray nozzles – Clean spray nozzles. 3. Incorrect cycle parameters. 4. If condition reoccurs, call STERIS.*
23. Excessive vapor exhausting from doors.	1. Fixed spray jets clogged – Check and clean jets. 2. Damaged or badly adjusted gaskets – Call STERIS.* 3. Damaged or badly adjusted damper – Call STERIS.* 4. If condition reoccurs, call STERIS.*
24. Vapor not removed from chamber.	1. Insufficient exhaust time – Increase exhaust time. 2. Damaged or badly adjusted Damper. 3. If condition reoccurs, call STERIS.*
25. Noisy exhaust fan.	Call STERIS.*
26. Noisy Drying fan.	Call STERIS.*
27. High pressure pump abnormally noisy.	Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-1. Troubleshooting Chart – No Alarm Screen or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
28. Suction pump abnormally noisy.	Call STERIS.*
29. Doors open and /or close too slowly and/ or vibrate.	1. Cable and pulley malfunction – Call STERIS.* 2. Door rails malfunction in wash chamber – Call STERIS.* 3. If condition reoccurs, call STERIS.*
30. Doors do not open completely.	1. Doors obstructed – Remove obstruction. 2. Cables and pulleys malfunction – Call STERIS.* 3. Doors guiding system malfunction – Call STERIS.* 4. Floor tilt still in upper position – Call STERIS.* 5. Air flow control improperly adjusted – Call STERIS.* 6. Air pressure improperly adjusted – Call STERIS.*
31. Doors open and/or close too quickly.	1. Air flow control improperly adjusted – Call STERIS.* 2. Air pressure improperly adjusted – Call STERIS.*
32. Travelers vibrating.	1. Cable(s) and pulley(s) malfunction – Call STERIS.* 2. Air flow control improperly adjusted – Call STERIS.* 3. Air pressure improperly adjusted – Call STERIS.*
33. Travelers are moving too slowly.	1. Cable and pulley malfunction – Call STERIS.* 2. Air flow control improperly adjusted – Call STERIS.* 3. Air pressure improperly adjusted – Call STERIS.*
34. Auto-tilt floor lifting does not operate properly.	1. Load exceeds 800 lb (363 kg) – Check load weight. 2. If condition reoccurs, call STERIS.*
35. Incomplete Drying.	1. Insufficient time set for drying phase – Increase drying time. 2. If condition reoccurs, call STERIS.*
36. Abnormal draining of wash chamber.	1. Self-cleaning filter clogged – Clean filter. 2. If condition reoccurs, call STERIS.*
37. Chemical pump(s) malfunction.	1. Fuse is blown – Call STERIS.* 2. Defective relay – Call STERIS.* 3. Defective chemical pump – Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart - Alarm Screen and/or Printout

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
1. Tank too long to fill. Alarm sounds and screen displays: ALARM: *(TANK NAME)* TOO LONG TO FILL Printer records: * ALARM *(TANK NAME)* TOO LONG TO FILL HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Supply valves closed – Open supply valves. 3. Building air supply too low – Call STERIS.* 4. STOP/RESET touch pad is pressed during the opening of the Unload Door. If operator does not press CYCLE START within 4 minutes, alarm will reoccur every 4 minutes (default) until a new cycle is started.
2. Tank too long to drain. Alarm sounds and screen displays: ALARM: *(TANK NAME)* TOO LONG TO DRAIN Printer records: * ALARM (TANK NAME) TOO LONG TO DRAIN HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Supply valves closed – Open supply valves. 3. Building air supply too low – Call STERIS.*
3. Alarm sounds and screen displays: ALARM: *(DET. NAME)* INJ NOT REACHED Printer records: * ALARM *(DETERGENT NAME)* INJ NOT REACHED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Detergent empty – Replace container. 3. If condition reoccurs, call STERIS.*
4. Alarm sounds and screen displays: ALARM: LOAD PUMP PRESSURE IS TOO LOW Printer records: * ALARM LOAD PUMP PRESSURE TOO LOW HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Debris screen filter clogged – Clean debris screen. 3. Self-cleaning filter clogged – Clean filter. 4. If condition reoccurs, call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
5. Alarm sounds and screen displays: ALARM: UNLOAD PUMP PRESSURE IS TOO LOW Printer records: * Alarm UNLOAD LOAD PUMP PRESSURE IS TOO LOW HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Debris screen clogged – Clean debris screen. 3. Self cleaning filter clogged – Clean filter. 4. If condition reoccurs, call STERIS.*
6. Alarm sounds and screen displays: ALARM: TRAVELER IS NOT MOVING Printer records: * ALARM TRAVELER IS NOT MOVING HH:MM:SSX YY/MM/DD	Traveler system takes more than 18 seconds to go up or down during the recirculation phase. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Traveler system is obstructed – Remove obstruction. 3. Building air supply too low – Call STERIS.* 4. If condition reoccurs, call STERIS.*
7. If **Drain Discharge Cooldown option** is present, alarm sounds and screen displays: ALARM: COOL DOWN WATER LEVEL DEFECT. Printer records: * ALARM: COOL DOWN WATER LEVEL DEFECT. HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Press CYCLE /START touch pad to resume operation. 3. If condition reoccurs, call STERIS.*
8. Alarm sounds and screen displays: ALARM: PRESSURE PUMP OVERLOADS TRIPPED Printer records: * ALARM PRESSURE PUMP OVERLOADS TRIPPED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the pressure pump – Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
9. **If Drying System option is present,** alarm sounds and screen displays: ALARM: SUCTION PUMP OVERLOADS TRIPPED Printer records: * ALARM SUCTION PUMP OVERLOADS TRIPPED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the suction pump – Call STERIS.*
10. **If Exhaust Fan option is present,** alarm sounds and screen displays: ALARM: EXHAUST FAN OVERLOADS TRIPPED Printer records: * ALARM EXHAUST FAN OVERLOADS TRIPPED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the exhaust fan – Call STERIS.*
11. Alarm sounds and screen displays: ALARM: DRYING FAN OVERLOADS TRIPPED Printer records: * ALARM DRYING FAN OVERLOADS TRIPPED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Controls detects a malfunction with the drying fan – Call STERIS.*
12. Alarm sounds and screen displays: ALARM: NEUTRAL PUMP OVERLOADS TRIPPED Printer records: * ALARM NEUTRAL. PUMP OVERLOADS TRIPPED HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Control detects a malfunction with the neutralizing pump – Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
13. **If pH Neutralizing System option is present,** alarm sounds and screen displays: ALARM: pH METER ERROR Printer records: * ALARM pH METER ERROR HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. pH meter detects water pH level too low and too high simultaneously – Call STERIS.*
14. Load doors remain closed after DOOR OPEN touch pad was pressed. Alarm sounds and screen displays: ALARM: LOAD DOORS DID NOT OPEN Printer records: * ALARM LOAD DOORS DID NOT OPEN HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Air supply valves are closed – Open air supply valves. 3. Air pressure is below specifications – Call STERIS.* 4. If situation reoccurs, call STERIS.*
15. Load doors remain open after DOOR CLOSE touch pad was pressed. Alarm sounds and screen displays: ALARM: LOAD DOORS DID NOT CLOSE Printer records: * ALARM LOAD DOORS DID NOT CLOSE HH:MM:SSX YY/MM/DD	More than 20 seconds needed to close load door. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Load doors are obstructed — Remove obstruction behind or between doors. 3. Air supply valves closed – Open air supply valves. 4. Air pressure is below specifications – Call STERIS.* 5. If condition reoccurs, call STERIS.*
16. Unload DOOR OPEN touch pad was pressed with load door open. Screen displays: ALARM: LOAD DOORS ARE OPEN Printer records: * ALARM LOAD DOORS ARE OPEN HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Loss of air supply during a cycle — Call STERIS.* 3. Load door sensors defective — Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
17. Unload door remains closed after DOOR OPEN touch pad was pressed. Alarm sounds and screen displays: ALARM: UNLOAD DOORS DID NOT CLOSE Printer records: * ALARM UNLOAD DOORS DID NOT OPEN HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Unload doors are obstructed — Remove obstruction behind or between doors. 3. Air supply valves closed – Open air supply valves. 4. Air pressure is below specifications – Call STERIS.* 5. If condition reoccurs, call STERIS.*
18. Unload door remains open after DOOR CLOSE touch pad was pressed. Alarm sounds and screen displays: ALARM: UNLOAD DOORS DID NOT CLOSE Printer records: * ALARM UNLOAD DOORS DID NOT CLOSE HH:MM:SSX YY/MM/DD	More than 20 seconds needed to close unload doors. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Unload doors are obstructed — Remove obstruction behind or between doors. 3. Air supply valves closed – Open air supply valves. 4. Air pressure is below specifications – Call STERIS.* 5. If condition reoccurs, call STERIS.*
19. Load DOOR OPEN touch pad was pressed with load-end door open. Screen displays: ALARM:LOAD DOORS ARE OPEN Printer records: * ALARM LOAD DOORS ARE OPEN HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Close load doors. Press CYCLE START to resume. 3. Loss of air supply during a cycle — Call STERIS.* 4. Door sensors defective — Call STERIS.* 5. If situation reoccurs, call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
20. Screen displays: MAINTENANCE DUE CALL SERVICE Printer records: MAINTENANCE DUE CALL SERVICE	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call STERIS.*
21. Alarm tone sounds and screen displays: ALARM: WATER TOO LONG TO HEAT Printer records: * ALARM WATER TOO LONG TO HEAT HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Water temperature time-out alarm has elapsed before recirculation water temperature setpoint is reached. Adjust time out alarm delay in Service Mode. 3. Steam supply valves closed – Open steam supply valves. 4. Steam pressure below specifications – Call STERIS.*
22. **If Drain Discharge Cooldown option is present,** alarm sounds and screen displays: ALARM: WATER TOO LONG TO COOL Printer records: * ALARM WATER TOO LONG TO COOL HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Cooldown time-out alarm has elapsed before water temperature in drain discharge cooldown tank reaches temperature setpoint – Adjust time out alarm delay in Service Mode. 3 Cold water supply valve closed – Open cold water supply valve. 4. Temperature of cold water above specifications – Call STERIS.*
23. Alarm sounds and screen displays: ALARM: TRAVELER SENSORS DEFECTIVE Printer records: * ALARM TRAVELER SENSORS DEFECTIVE HH:MM:SSX YY/MM/DD	Control detects traveler system in up and down positions simultaneously. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Defective Traveler Cylinder sensors – Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
24. **If pH Neutralizing System option is present,** alarm sounds and screen displays: ALARM: pH CANT BE NEUTRALIZED Printer records: * ALARM pH CANT BE NEUTRALIZED HH:MM:SSX YY/MM/DD	Water in the cooldown tank is not neutralized after 16 trials. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Neutralizant chemical container empty. Change container. 3. Defective cooldown tank pH injection pump – Call STERIS.* 4. Defective pH probe (J1) – Call STERIS.*
25. Alarm sounds and screen displays: ALARM: LOAD BST RTD IS DEFECTIVE Printer records: * ALARM LOAD BST RTD IS DEFECTIVE HH:MM:SSX YY/MM/DD	Open or short circuit on Booster (in-line heat exchanger) RTD. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call STERIS.*
26. Alarm sounds and screen displays: ALARM: UNLOAD BST RTD IS DEFECTIVE Printer records: * ALARM UNLOAD BST RTD IS DEFECTIVE HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Open or short circuit on Booster (in-line heat exchanger) RTD – Call STERIS.*
27. **If Drain Discharge Cooldown option is present,** alarm sounds and screen displays: ALARM: COOLDOWN RTD IS DEFECTIVE Printer records: * ALARM COOLDOWN RTD IS DEFECTIVE HH:MM:SSX YY/MM/DD	Open or short circuit on Cooldown RTD. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
28. Alarm sounds and screen displays: ALARM: PUMP PRESSURE IS DEFECTIVE Printer records: * ALARM PUMP PRESSURE IS DEFECTIVE HH:MM:SSX YY/MM/DD	Open or short circuit on Pressure Transmitter. 1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call STERIS.*
29. **If Drying System option is present,** alarm sounds and screen displays: ALARM: DRYING TOO LONG TO HEAT Printer records: * ALARM DRYING TOO LONG TO HEAT HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Drying temperature time-out alarm has elapsed before air temperature reaches setpoint – Adjust time-out alarm delay in Service Mode. 3. Steam supply valves closed – Open steam supply valves. 4. Steam pressure below specifications — Call STERIS.*
30. Water flowmeter is defective. Alarm sounds and screen displays: ALARM: WATER FLOW METER IS DEFECTIVE Printer records: * ALARM WATER FLOW METER IS DEFECTIVE HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Call STERIS.*
31. Alarm sounds and screen displays: ALARM: ALKALINE PUMP IS DEFECTIVE Printer records: * ALARM ALKALINE PUMP IS DEFECTIVE HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Alkaline chemical injection pump still energized even if control de-energized pump — Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

Table 7-2. Troubleshooting Chart – Alarm Screen and/or Printout (Cont'd)

PROBLEM	POSSIBLE CAUSE AND/OR CORRECTION
32. Alarm sounds and screen displays: ALARM: ACID PUMP IS DEFECTIVE Printer records: * ALARM ACID PUMP IS DEFECTIVE HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Acid chemical injection pump still energized even if control de-energized pump — Call STERIS.*
33. **If pH Neutralizing System option is present,** alarm sounds and screen displays: ALARM: pH INJECTION TIME TOO LONG Printer records: * ALARM pH INJECTION TIME TOO LONG HH:MM:SSX YY/MM/DD	1. Press ALARM REPLY touch pad to silence alarm buzzer. 2. Chemical container empty. — Replace empty container. 3. pH injection time longer than 15 minutes — Call STERIS.*

**Service charges may be incurred. Consult your warranty for details.*

REPLACEMENT PARTS AND PRODUCTS

8

WARNING–PERSONAL INJURY HAZARD AND/OR EQUIPMENT DAMAGE HAZARD: Only fully qualified service personnel should make repairs or adjustments to this equipment. Maintenance done by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS regarding service options.

IMPORTANT: A listing of the *Safety Precautions* to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

To order replacement parts and/or supply products, proceed as follows:

1. Include the description and part/order number as listed in **Table 8-1**.
2. Include the model and serial numbers of your unit on your order.
3. Send your order directly to STERIS.

Contact STERIS for recommendations on cleaning products or parts that are not listed below.

NOTE: Use only STERIS authorized parts on this equipment. Use of unauthorized parts will void the warranty.

Table 8-1. Replacement Parts

Description	Part Number
Consumables	
Paper, Roll, Printer	P129359-008
Lubricant, Silicone for squeeze tubes	P117950-599
Reflector, Fluorescent, Flow 20 W	P117906-132
Inlet Pre-Filter, for IFA12 fan	P117989-188
Replacement Parts	
Spray Jet, Stainless Steel, 1/8" HU2510	P117909-578
Spray Jet, Stainless Steel, 1/8" HU2530	P117909-774
Tubing, Air, 1/4" O.D., Red	P117955-228
Tubing, Air, 1/4", O.D., Blue	P117955-229
Tubing, Air, 5/16", Nylon, Red	P117005-012
Tubing, Air, 5/16", Nylon, Blue	P117005-011
Hose, C-Flex, 1/2" I.D. x 7/8" O.D.	P117020-529
Fuse, 3 A, 600 V	P117909-744
Fuse, 5 A, 600 V	P117901-328
Fuse, 5 A, 600 V	P117909-034
Fuse 6 A, 600 V	P117903-070
Fuse, 6.25 A, 600 V	P117951-583

cont'd...

Table 8-1. Replacement Parts (Cont'd)

Description	Part Number
Fuse, 15 A, 600 V	P117902-669
Fuse, 30 A, 600 V	P117902-671
Bushing, Spray Header (Wash Chamber and Accessory)	P117005-978
Bushing, Top Rotary Spray Arm	P117987-854
Bushing, Hub, Central Header	P117996-805

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